

STATE OF KANSAS
PUBLIC WATER SUPPLY
ANNUAL COMPLIANCE REPORT
FOR
CALENDAR YEAR 2003



JULY 2004

KATHLEEN SEBELIUS, GOVERNOR

Kansas Department of Health and Environment
Roderick L. Bremby, Secretary
Ronald Hammerschmidt, Director, Division of Environment
Karl W. Mueldener, Director, Bureau of Water
Bureau of Water
1000 SW Jackson - Suite 420
Topeka, KS 66612-1367
(785) 296-5514

TABLE OF CONTENTS

I.	Mission Statement	Page 4
II.	Introduction.	Page 5
III.	Public Water Supply Systems	Page 5
IV.	Regulatory Programs	Page 11
	Compliance and Enforcement	
V.	Total Coliform.	Page 14
	Compliance and Enforcement	
VI.	Phase II/V.	Page 18
	V(a) Asbestos	Page 19
	Asbestos Monitoring Results	
	V(b) Nitrate/Nitrite	Page 19
	Nitrate Monitoring Results	
	Compliance and Enforcement	
	V(c) Inorganic Chemicals	Page 22
	IOC Monitoring Frequency	
	IOC Monitoring Results	
	V(d) Volatile Organic Chemicals	Page 23
	VOC Monitoring Results	
	V(e) Synthetic Organic Compounds	Page 24
	SOC Monitoring Frequency	
	SOC Monitoring Results	
VII.	Unregulated Contaminants	
	V(f) Unregulated Contaminant Monitoring	Page 27
VIII.	Lead and Copper	Page 27
	Lead and Copper Monitoring Results	
IX.	Disinfection By-products	Page 28
	Monitoring Results for THMs	
	Time Table for DBPR Requirements	
X.	Surface Water Treatment	Page 30
	Surface Water Monitoring Results	
XI.	Radionuclides	Page 31
	Monitoring Results for Radionuclides	
	Monitoring Results for Uranium	

XII.	Consumer Confidence Reports (CCR)	Page 33
XIII.	Operator Certification System Classification	Page 33
XIV.	Summary	Page 35
XV.	Definitions	Page 40

APPENDIXES

Appendix A	Appendix A
Violation Tables	
Appendix B	Appendix B
MCL Violations	
Appendix C	Appendix C
List of KDHE Contacts	

I. KDHE's MISSION STATEMENT

KDHE's mission is to optimize the promotion and protection of the health of Kansans through efficient and effective public health programs and services and through preservation, protection, and remediation of natural resources of the environment.



II. INTRODUCTION

The **Kansas Department of Health and Environment (KDHE)** is charged with protecting and improving the health and environment of Kansans through the wise stewardship of resources. To achieve this, KDHE's Bureau of Water, Public Water Supply Section is responsible for regulating all public water supply systems in the state and assisting them in providing potable water to the people of Kansas. There are approximately 1,100 public water supply systems in Kansas, consisting of cities, rural water districts, and privately owned systems. These water systems serve small convenience shops up to a city of more than 300,000 persons.

This report is a summary of Kansas water systems compliance with drinking water regulations for calendar year 2003. Included in this report are all violations of the maximum contaminant levels (**MCL**), treatment techniques, and monitoring requirements. This report has been prepared by KDHE to inform the general public of the quality of drinking water in Kansas and to comply with the federal **Safe Drinking Water Act (SDWA)**.

All SDWA data for a state is stored in an automated database called the Safe Drinking Water Information System (SDWIS). This database contains an inventory of PWSs, violation records, and individual analytical results.

The previous report summarizing Kansas drinking water quality for calendar year 2002 is available at www.kdhe.state.ks.us.

III. PUBLIC WATER SUPPLY SYSTEMS

In the State of Kansas, a public water system is defined by **Kansas Statute (K.S.A.) 65-162a** and **Kansas Administrative Regulation (K.A.R.) 28-15-11(a)** as a *“system for delivery to the public of piped water for human consumption that has at least 10 service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.”* These systems are regulated by KDHE to assure citizens are supplied safe drinking water.

All water systems are required by state regulation (K.A.R. 28-15-18(a)) to be operated and maintained by personnel that are properly trained and certified. Properly trained operators are a critical component in assuring safe drinking water to the public. For this purpose, KDHE administers an operator certification program.

During 2003, there were 1,069 water systems serving water in Kansas. These water systems served approximately 2.6 million Kansas residents in addition to the transient population visiting or traveling through the state. Water systems are classified into two categories: community or non-community water systems. The majority of water systems are community water systems. Community water systems serve a year-round residential population. Non-community water systems serve non-residential populations. Non-community water systems can either be transient or non-transient. Transient non-community water systems serve different people each day. Non-transient non-community water systems serve the same people each day. Table 1 summarizes the three types of water systems. Table 2 on page 7 shows the types and numbers of systems in operation during 2003.

TABLE 1.
TYPES OF PUBLIC WATER SUPPLY SYSTEMS

1. **COMMUNITY** - *Same residential consumers every day.*
e.g.: towns, mobile home/trailer parks, rural water districts, subdivisions.
2. **TRANSIENT NON-COMMUNITY** - *Different non-residential consumers every day.*
e.g.: motels, parks, airports, campgrounds, truck-stops.
3. **NON-TRANSIENT NON-COMMUNITY** - *Same non-residential consumers every day.*
e.g.: schools, day care facilities, industrial or manufacturing facilities

Water systems obtain water from two sources: **groundwater (GW)** or **surface water (SW)**. Some water systems obtain water from both groundwater and surface water sources. (Figure 2)

Table 2 and Figure 1 on the following page show the three types of water systems, the number of systems in each type, the number of systems using groundwater, surface water, or a combination of both, and the total population served by each water system type. Water systems that use both surface and groundwater are governed by surface water regulations.

TABLE 2.

SUMMARY OF PUBLIC WATER SUPPLY SYSTEMS IN KANSAS

TYPE OF WATER SYSTEM	GW	SW	GW/SW	TOTAL(%)	POPULATION
Community Water Systems	543	303	67	913 (85%)	2,602,548
Transient Non-Community Water Systems	95	2	4	101(10%)	3,573
Non-transient Non-Community Water Systems	54	1	0	55(5%)	18,038
TOTAL	692	306	71	1069 (100%)	2,624,159

The following four figures show the types, sources and population served by the different sources of water.

FIGURE 1.

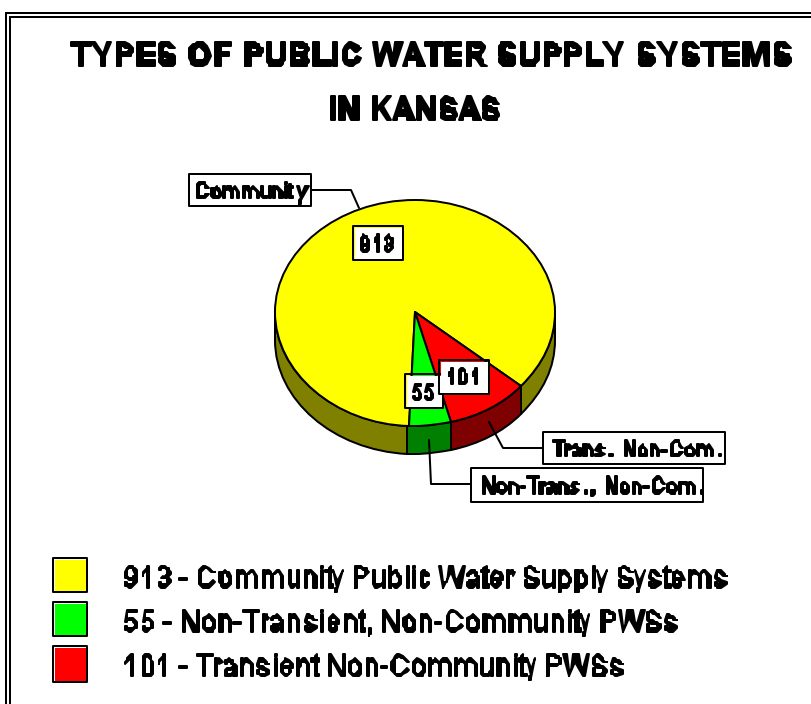


Figure 2 shows the number and percentages of community public water supply systems, according to the population served. Fifty-two percent of the systems serve a population of less than 500.

FIGURE 2.

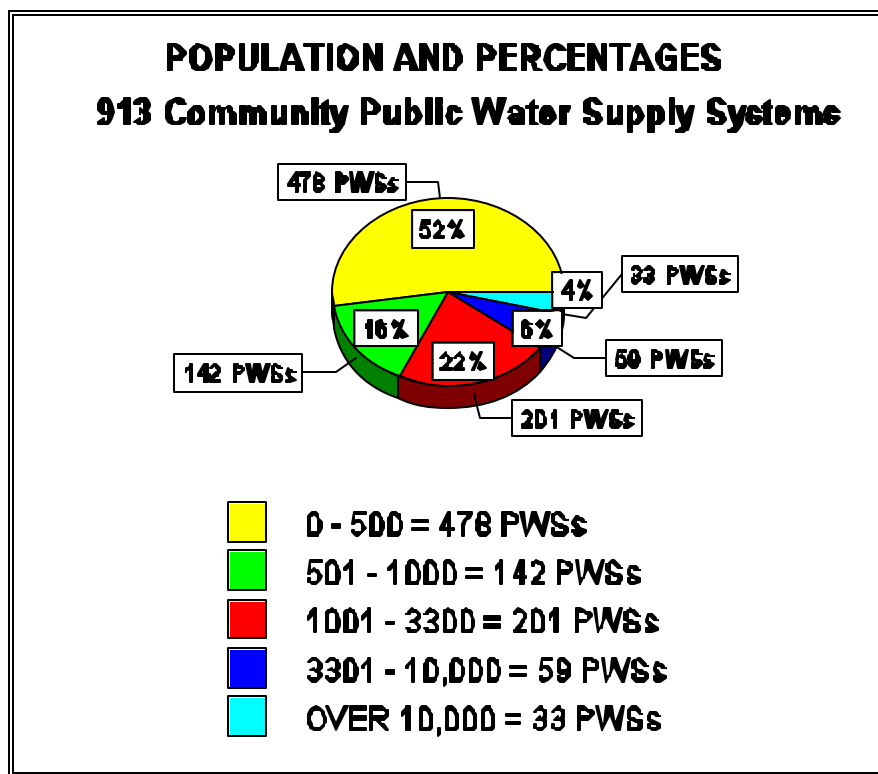


Figure 3 shows the numbers and percentages of systems using groundwater, surface water, or a combination of both.

FIGURE 3.

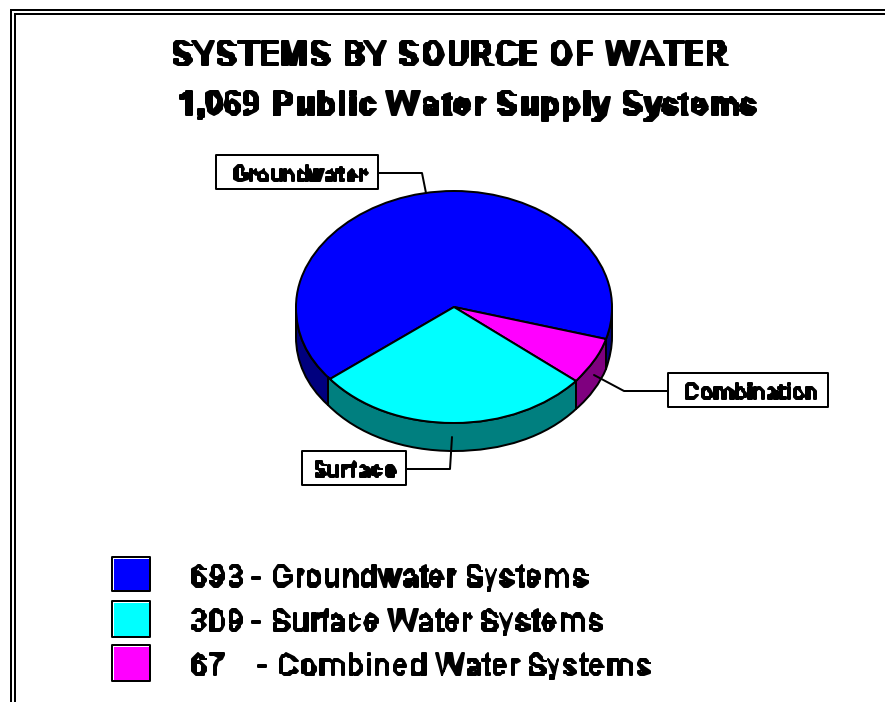
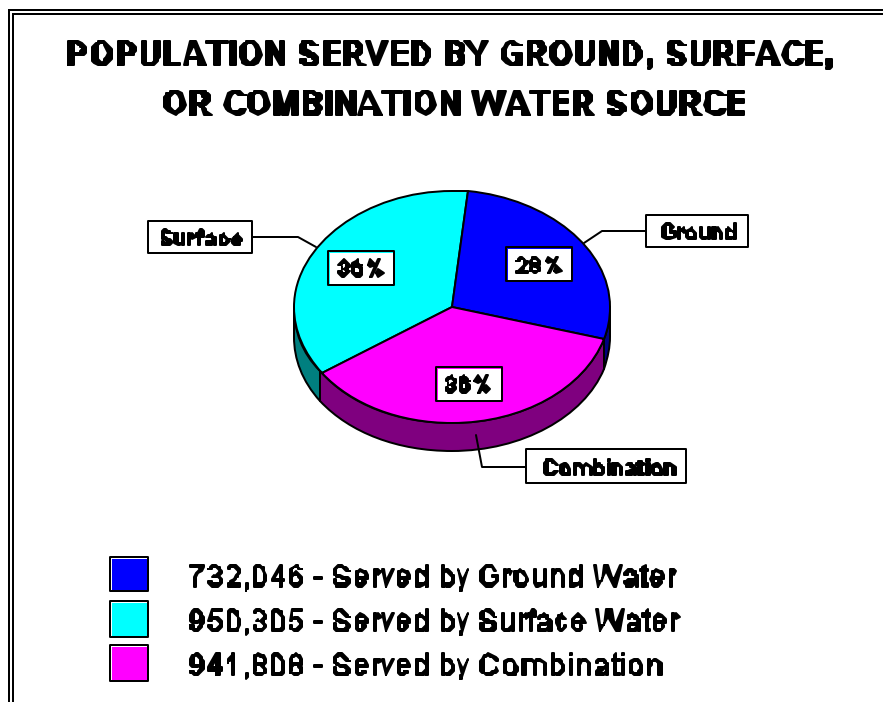


Figure 4 shows the resident population for all water systems served by groundwater, surface water, or a combination of both sources. These numbers include systems purchasing surface or groundwater from other water systems.

FIGURE 4.



IV. REGULATORY PROGRAMS

To help ensure good drinking water quality, several regulatory programs have been developed and implemented by KDHE. These programs monitor water quality in several different areas, ranging from microbiological organisms to inorganic and organic chemicals and radionuclides.

Kansas regulations establish maximum permissible levels for certain drinking water contaminants. These levels are known as **maximum contaminant levels (MCLs)**. In some situations, regulations also require application of minimum water **treatment techniques (TT)**.

To verify compliance with the MCLs and treatment techniques, regulations require water systems to regularly monitor and report their water quality parameters to KDHE. These requirements help to assure that all water systems provide safe drinking water for human consumption.

COMPLIANCE AND ENFORCEMENT

One of KDHE's objectives is to assist water systems in complying with all state and federal drinking water regulations.

The department first uses technical assistance rather than formal enforcement action to return water systems to compliance. When necessary, enforcement action is administered according to an escalation policy. The first step is to notify the water system by mail that a violation occurred. If three violations occur within any twelve month period, a directive is sent to the water system. If violations continue then either a Consent Order or an Administrative Order, with or without a civil penalty, could be issued.

KDHE staff are available to assist water systems with regulatory concern and technical questions, and will refer the systems to third party technical assistance providers as appropriate.

KDHE **has not** issued any variances or exemptions from the SDWA requirements to any water system and has not received any request for variances or exemptions from any water system. All water systems are expected to comply with all drinking water regulations and to perform public notice if violations occur.

"Boil water" advisories are issued to assure the public is not placed at undue risk from exposure to potentially harmful microorganisms as a consequence of consumption of drinking water from a public water system which is known to be, or suspected to be, contaminated. The most common reason for issuance of a boil water advisory is a loss of pressure in the distribution system. The public water system and/or KDHE will notify area media when the boil water advisory has been rescinded. 25 boil water advisories were issued either by the public water system or by KDHE during 2003. The names of systems that incurred a boil water advisory are listed in Appendix B.

Water systems that have recurring monitoring and/or MCL violations are subject to having an administrative order (with or without penalty) issued by KDHE. Before an administrative order is issued, KDHE first issues a Directive in an attempt to get the public water supply to correct the violation.

A summary of formal enforcement actions during 2003 is presented in Table 3.

TABLE 3.

DIRECTIVES

SYSTEM NAME	ACCT #	EPA #	ISSUED DATE	VIOLATIONS(S)
Russell Co. RWD #4	J4010	KS2016705	10/13/03	BacT Monitoring
Sedgwick Co. RWD #2	X1510	KS2017315	04/17/03	Chlorine Monitoring

CONSENT ORDERS

SYSTEM NAME	ACCT #	EPA #	ISSUED DATE	VIOLATIONS(S)	CASE #
Argonia	A7000	KS2019116	08/07/03	Nitrate MCL	03-E-0097
Arlington	A8000	KS2015511	05/01/03	Nitrate MCL	03-E-0074
Harper Co. RWD #4	F701	KS2007708	10/16/03	Nitrate MCL	03-E-0181
Ingalls	L8200	KS2006902	10/16/03	Nitrate MCL	03-E-0181
Plains	S9000	KS2011903	2003	Nitrate MCL	03-E-0217
White City	Y3000	KS2012703	12/23/03	Nitrate MCL	03-E-0213

CONSENT AGREEMENTS*

SYSTEM NAME	ACCT #	EPA #	ISSUED DATE	VIOLATIONS(S)	CASE #
Cherokee Co. #1	F9610	KS2002111	02/11/03	Pb/Cu Monitoring	02-E-0097
Coolidge	F7500	KS2007501	07/28/03	BacT, Total Radium, PN	02-E-0016
Robinson	U1500	KS2001301	02/28/03	Nitrate	99-E-0170
Toronto	W6500	KS2020701	02/18/03	BacT/Cl	02-E-0287

*A Consent Agreement is an action taken as a result of an appeals hearing in which KDHE and a public water supply system mutually agree to terms to be completed within a specific time frame in lieu of being forced to comply as Ordered. A Consent Agreement may reduce a penalty or allow more time for a system to return to compliance if an agreement can be reached between all parties involved.

ADMINISTRATIVE ORDERS

SYSTEM NAME	ACCT #	EPA #	ISSUED DATE	VIOLATION(S)	CASE #
Atlanta	B0500	KS2003502	08/05/03	SWTR-Turbidity	03-E-0050

NAME	ACCT. #	EPA #	ISSUED DATE	VIOLATION(S)	CASE #
George Black-Wellington	12147	N/A	02/11/03	Falsifying Data	03-E-0012
William Anderson-Pleasanton	1538	N/A	09/02/03	Falsification of records	03-E-0122

ADMINISTRATIVE ORDERS WITH PENALTY

SYSTEM NAME	ACCT #	EPA #	ISSUED DATE	VIOLATIONS(S)	CASE#
Western Acres-Hutchinson	L6516	KS2015506	01/06/03	BacT, Directive, PN	03-E-0001

Current regulations administered by KDHE address the following areas of drinking water contaminants:

- < **TOTAL COLIFORM BACTERIA**
- < **PHASE II/V CHEMICALS**
- < **LEAD AND COPPER**
- < **DISINFECTION BY-PRODUCTS**
- < **SURFACE WATER TREATMENT**
- < **RADIONUCLIDES**

V. TOTAL COLIFORM BACTERIA

Water has the potential to effect public health since it can be a medium for transmitting diseases. For this reason, methods of disinfecting water have been developed. The most common method used today for disinfecting water is chlorination. Chlorination of drinking water has been practiced since the early 1900s.

Total coliforms are common in the environment and are generally not harmful themselves. Fecal coliforms and E. coli are generally not harmful but their presence in drinking water is serious because they usually are associated with sewage or animal waste. The presence of these bacteria in drinking water generally is a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease (pathogens).

In Kansas, water systems are required by state regulation K.A.R. 28-15-19(a) to disinfect all drinking water delivered to the public. To help evaluate the effectiveness of the disinfection method and determine microbiological quality, all systems are required by state regulation K.A.R. 28-15-14 to submit monthly water samples for coliform bacteria testing. Total coliform testing is used as an indicator of the possible presence of other bacteriological contaminants. Systems can choose to have this bacteriological testing of their water performed by KDHE's microbiology laboratory or a state certified private laboratory.

A summary of the results of approximately 37,700 water samples collected and analyzed for coliform bacteria in the state laboratory during 2003 is presented in Table 4.

TABLE 4.

SUMMARY OF BACTERIOLOGICAL MONITORING RESULTS -2003

QUARTER COLLECTED	NEGATIVE SAMPLES	COLIFORM POSITIVE	FECAL POSITIVE	INVALID SAMPLES	TOTAL QUARTERLY TOTALS
First Quarter Samples:	9032	38	4	209	9283
Second Quarter Samples:	9237	63	9	257	9566
Third Quarter Samples:	9391	87	19	241	9738
Fourth Quarter Samples:	9196	59	14	277	9546
Total Samples for 2003:	36856	247	46	984	38133

Key: QUARTER = Three month period; four quarterly periods in one year.
NEGATIVE = Samples with no coliform bacteria present.
COLIFORM POSITIVE= Samples with coliform bacteria present. (does not include fecal coliform)
FECAL POSITIVE= Samples with fecal coliform bacteria present.
INVALID = Samples not analyzed (too old, excessive chlorine, insufficient sample volume, empty, lost in mail, excess growth).

COMPLIANCE AND ENFORCEMENT

Water systems that failed to collect one or more required samples within the monthly compliance period were assessed a *routine monitoring violation*. When a water sample tests positive for coliform bacteria, water systems are required to collect three repeat samples (also called check samples). If the water system failed to collect one or more of these repeat (check) samples, the system was then assessed a *repeat monitoring violation*. Monitoring violations result in the system being required to issue public notification.

The system could have incurred a maximum contaminant level (MCL) violation if a number of water samples tested positive for total coliform, or the system could have incurred a more serious acute MCL violation if fecal coliform or E. coli were found in one or more of the total coliform positive samples. In both cases, the systems are required to notify the public of the violations by publication, direct mail, and/or hand delivery. For acute MCL violations, systems are required to provide notices to radio and television stations and contact KDHE within 24 hours of learning of the violation.

A summary of all monitoring and MCL violations during 2003 is presented in Table 5.

TABLE 5.

**SUMMARY OF MONITORING VIOLATIONS AND
COLIFORM MCL VIOLATIONS IN 2003**

TYPE OF VIOLATION	TOTAL # OF VIOLATIONS	# OF SYSTEMS IN VIO.	% OF SYSTEMS IN VIO.	% OF SYSTEMS IN COMPLIANCE
Monitoring - Major & Minor (Routine & Repeat)	160	113	11%	89%
Non-Acute Coliform MCL	33	30	3%	97%
Acute Coliform MCL	5	5	1%	99%

A total of 198 bacteriological monitoring violations occurred during 2003. These 198 monitoring violations were incurred by 148 water systems.

A total of 35 water systems had Total Coliform MCL violations because water samples tested positive for coliform and/or fecal coliform bacteria. These 35 water systems received a total of 38 acute and non-acute MCL violations. The names of systems that incurred a monitoring or MCL violation are listed in Appendix B.

Non-Acute MCL:

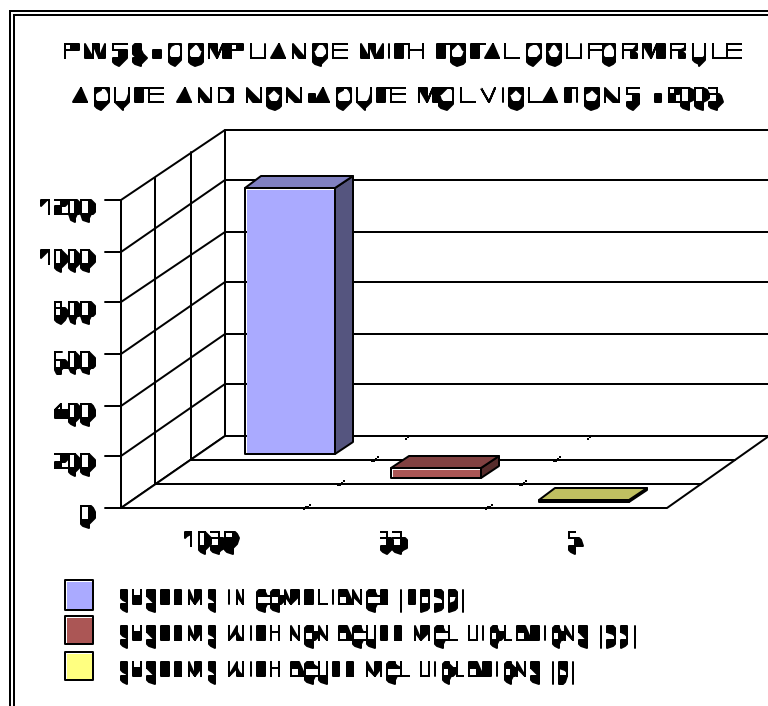
The standard is that no more than one sample per month (no more than 5% of samples for systems doing over 40 samples a month) may contain coliform.

Acute MCL:

When total coliforms are present in any sample, that sample is also analyzed for fecal coliform or E. coli. Any fecal coliform positive repeat sample or E. coli positive repeat sample, or any total coliform positive repeat sample following a fecal coliform positive or E coli positive routine sample is an acute coliform violation.

Figure 6 shows a comparison between the water systems that incurred acute and non-acute MCL violations and those in compliance during 2003. Note that the same seven systems that had an acute MCL violation also had a non-acute total coliform violation the same month..

FIGURE 6.



*same 5 systems that had acute MCL violations also had non-acute total coliform violation.

Consent Agreements are issued after an Administrative Order as part of the appeals process. This is an agreement between KDHE and the PWS that specific actions will be taken, and the water supply system will stay in compliance for a specific amount of time.

Consent Agreements were issued for:

- 1) City of Coolidge - Bacteriological, Total Radium and PN violations
- 2) City of Toronto - Bacteriological/Chlorine Residual violations

A Directive was issued to:

- 1) Russell Co. RWD #4 - Bacteriological monitoring violation

Administrative Order with Penalty was issued to:

- 1) Western Acres MHP - Hutchinson - \$500.00 penalty for bacteriological, Directive and PN violations.

VI. PHASE II/V CHEMICAL RULES

The Phase II/V Chemical Rule establishes **maximum contaminant levels (MCL)** and **treatment techniques** for various contaminants affecting drinking water, such as solvents, pesticides and herbicides, and heavy metals.

Kansas has adopted these federal drinking water regulations in the **Kansas Administrative Regulations (K.A.R.)**. All the contaminants regulated by this rule may be harmful to human health at certain concentrations and many are toxic and/or carcinogenic.

The Phase II/V rules contain five groups of contaminants:

- , **ASBESTOS**
- , **NITRATE/NITRITE**
- , **INORGANIC CHEMICALS (IOC)**
- , **VOLATILE ORGANIC COMPOUNDS (VOC)**
- , **SYNTHETIC ORGANIC COMPOUNDS (SOC)**

The Phase II/V Rules apply to all community water systems and non-transient non-community water systems. The nitrate/nitrite section of this regulation also applies to transient non-community water systems. Water systems that purchase all their water from other systems are not required to monitor for these contaminants.

Water systems are required to monitor for contaminants under a standardized monitoring schedule consisting of three compliance periods of three years each. During these compliance periods, water systems are required to perform specific monitoring depending on the population served and whether they use surface or groundwater. The first three-year compliance period began January 1, 1993 and ended December 31, 1995. The second compliance period began January 1, 1996 and ended on December 31, 1998. The third compliance period began January 1, 1999 and ended on December 31, 2001. This completed the first compliance cycle of nine years. The first three-year compliance period of the second nine years compliance period began January 1, 2002 and will end on December 31, 2004.

Water systems using surface water are required to monitor more frequently than those using groundwater because surface water is more susceptible to contamination. Water systems with populations greater than 3,300 are also required to monitor more frequently than small systems with populations of 3,300 or less. The monitoring data presented in this report is for calendar year 2003, which is the second year of the first monitoring period in the second compliance period.

With the exception of asbestos, this regulation specifies that all the water samples must be collected at the **point of entry (POE)**. The POE is defined as a point after raw water has been treated (disinfected) and before it enters the distribution system.

Water systems are out of compliance with this rule by either failing to monitor or having an MCL violation. These violations require the system to issue public notice by notifying all their consumers of the violation using newspaper, television, radio, mail, and/or posted notices.

VI(a). Asbestos

Asbestos is a naturally occurring mineral found in the earth's crust in a fibrous form. Inhalation of asbestos fibers has been shown to produce lung tumors in humans. Asbestos can be present in surface and ground water. Because asbestos fibers in water do not evaporate into air or break down in water, small fibers and fiber-containing particles may be carried long distances by water currents before settling to the bottom; larger fibers and particles tend to settle more quickly.

Ingestion of asbestos fibers greater than 10 micrometers in length has been shown to cause benign tumors in laboratory rats. To reduce the potential risk of cancer or other adverse health effects that have been observed in laboratory animals, EPA has set the drinking water standard for asbestos at 7 million fibers per liter (fibers longer than 10 micrometers).

Asbestos generally enters drinking water either from contact with natural mineral deposits or asbestos-cement pipes used in water distribution systems. Geologically, Kansas does not have any naturally occurring asbestos. Therefore, KDHE waived source water asbestos monitoring for all water systems during the first and second compliance cycles. However, water systems that utilize asbestos-cement pipes in their distribution system were required to test for asbestos during the first compliance cycle. To identify systems having asbestos-cement pipes in 1993, KDHE conducted a survey of all water systems. The results of this survey yielded 208 water systems having asbestos-cement pipe. These systems were required to monitor for asbestos in their distribution systems, before the end of the first compliance period (December 31, 1995). Systems with asbestos pipe were required to monitor again during the first period of the second compliance cycle.

ASBESTOS MONITORING RESULTS

Most uses of asbestos were banned in the United States by the EPA on July 12, 1989 because of potential adverse health effects in exposed persons. The remaining, currently allowed uses of asbestos include battery separators, sealant tape, asbestos thread, packing materials, and special industrial gaskets.

Sixteen water systems have replaced asbestos pipes in their system.

Fifty-seven systems tested for Asbestos during 2003. K.A.R. 28-15-14(c)(3) states "a condition of the waiver shall be a requirement that a system takes a minimum of one sample while the waiver is effective. The term during which the waiver is effective shall not exceed one compliance cycle (9 years).

VI(b). Nitrate/Nitrite

Many drinking water contaminants, such as nitrate and nitrite are found naturally occurring in the environment. Nitrogen may find its way into the groundwater from decaying plant and animal matter, precipitation, and urban runoff. Fertilization of agricultural and urban land with ammonium nitrate, and runoff from livestock operations are also a significant source of nitrate contamination of groundwater.

Excessive amounts of nitrate and nitrite can cause methemoglobinemia in infants, also known as “blue-baby syndrome.” To safeguard infants from this condition, Kansas regulations (K.A.R. 28-15-13(b)) set the MCL for community water systems at **10 milligrams per liter (mg/l)** for nitrate and 1 mg/l for nitrite as the maximum allowable concentration in public drinking water supplies. Kansas regulations (K.A.R. 28-15-14(b)) require water systems with their own sources of water to monitor all their **points of entry (POE)** at least once a year for nitrate. Water systems that exclusively use purchased water from other systems are exempt from this monitoring. The MCL for non-community water systems is set at 20 milligrams per liter (mg/l).

Boiling the water will only concentrate nitrates in drinking water, and should not be attempted. Alternate source of drinking water should be provided for all infants less than six months of age, mothers nursing infants less than six months of age, and pregnant women.

The drinking water provided must meet the requirements of K.A.R. 28-15-13. If bottled water is chosen to meet this requirement, the water system shall obtain a certification from the bottled water supplier that the bottled water meets the appropriate requirements of the U.S. Food and Drug Administration concerning the source of the water and monitoring of water quality.

NITRATE MONITORING RESULTS

During 2003, 729 community water systems were required to monitor from 1,091 POEs for nitrate. Thirty community water systems had analytical results greater than the nitrate MCL of 10 mg/l. The minimum concentration was below the detection limit and the maximum concentration reported was 18 mg/l.

Ten water systems received monitoring violations for not submitting the required annual nitrate sample for analysis during 2003.

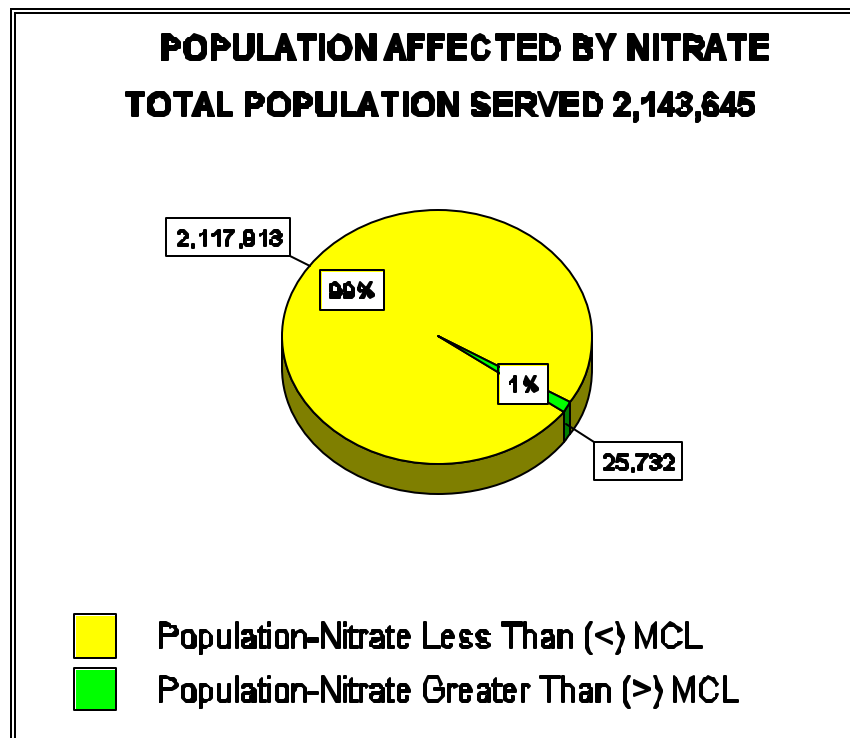
Nine non-community water systems had analytical results greater than 10 mg/l, but below the allowable 20 mg/l, except for Tyson Fresh Meats (formerly IBP, Inc.) exceeded the allowable MCL two consecutive quarters during 2003.

The water system with the largest population affected by nitrate MCL violations was the city of Scott City with a population of 3,765. The city of Scott City has 6 wells and 6 POEs, but only 1 POE exceeded the nitrate MCL. The city started blending water from the well in violation with a well that has acceptable water quality in order to reduce the amount of nitrate below the MCL. The names of systems that incurred a Nitrate monitoring or MCL violation are listed in Appendix B.

The total population served by all water systems monitoring for nitrate was 2,143,645. The total population of water systems with no POE monitoring results exceeding the nitrate MCL was 2,117,913. The total population of water systems with a POE monitoring result exceeding the MCL was 25,732, which is less than one percent of the total population.

Figure 7 shows the population affected by nitrate MCL violations in comparison with the population of water systems in compliance.

FIGURE 7.



COMPLIANCE AND ENFORCEMENT

Water systems with nitrate monitoring results above the MCL or failing to monitor were required to do public notice and provide proof to KDHE that public notice was performed. All water systems with nitrate violations performed the required public notice. Water systems with MCL violations were also required to monitor for nitrate at least quarterly until they are reliably and consistently below the MCL.

During 2003, KDHE issued “Nitrate Consent Orders” for:

- 1) City of Argonia
- 2) City of Arlington
- 3) Harper Co. RWD #4
- 4) City of Ingalls
- 5) City of Plains
- 6) City of White City

Other water systems that are operating under consent orders are currently looking for new sources of water that meet all MCL requirements for drinking water.

A Consent Agreement was issued to:

- 1) City of Robinson - Nitrate

VI(c). Inorganic Chemicals

Kansas regulations (K.A.R. 28-15-13(b)) set MCLs for nine metals and two non-metal contaminants. Table 6 lists these IOC contaminants and their MCLs in **milligrams per liter (mg/l)**. Most of these IOCs occur naturally in the environment and are soluble in water. Because of this, they are potential contaminants of drinking water. Not all IOCs originate from natural mineral deposits. Industrial activities such as metal finishing, textile manufacturing, mining operations, electroplating, manufacturing of fertilizers, paints, and glass can also generate these contaminants.

Inorganic contaminants can be toxic to humans at certain levels. Cadmium, chromium, and selenium can cause damage to the kidneys, liver and nervous and circulatory systems. Barium has been associated with high blood pressure and mercury has been shown to damage kidneys. Antimony, beryllium, cyanide, nickel and thallium have been shown to damage the brain, lungs, kidneys, heart, spleen and liver.

IOCs can be removed from drinking water using various available technologies such as coagulation/filtration, lime softening, reverse osmosis, ion exchange, oxidation, activated alumina, and granular activated carbon.

TABLE 6.
REGULATED INORGANIC CHEMICALS (IOC)

Chemical Name	Maximum Contaminant Level (MCL)
<i>Antimony</i>	<i>0.006 mg/l</i>
<i>Arsenic</i>	<i>0.05 mg/l</i>
<i>Barium</i>	<i>2 mg/l</i>
<i>Beryllium</i>	<i>0.004 mg/l</i>
<i>Cadmium</i>	<i>0.005 mg/l</i>
<i>Chromium</i>	<i>0.1 mg/l</i>
<i>Cyanide</i>	<i>0.2 mg/l</i>
<i>Fluoride</i>	<i>4 mg/l</i>
<i>Mercury</i>	<i>0.002 mg/l</i>
<i>Selenium</i>	<i>0.05 mg/l</i>
<i>Thallium</i>	<i>0.002 mg/l</i>

IOC MONITORING FREQUENCY

All community and non-transient non-community water systems are required to monitor each **point of entry (POE)** for IOCs. Water systems using groundwater as their sole source must monitor at least once during every three year compliance period. Systems using surface water as a source must monitor for IOCs at least once a year. Systems exclusively purchasing treated water as their source are exempt from this monitoring.

Water systems incurring a MCL violation are required to increase their monitoring to at least quarterly. Water systems having a MCL or monitoring violation are required to notify their customers of such violations by issuing a public notice.

IOC MONITORING RESULTS

During 2003, 296 water systems monitored for IOCs. Selenium was the only inorganic chemical detected above the MCL. See Appendix B for the name of the only water system that incurred violations. This system has had high levels of selenium detected since 1995, and monitored quarterly for selenium during 2003.

The water system in violation of the selenium MCL represent less than one percent of the total systems in Kansas, resulting in a compliance rate greater than 99 percent. The total population affected by these selenium MCL violations was 80.

All other IOC results were at or below MCLs. The names of systems that incurred an IOC monitoring violation or selenium MCL violation are listed in Appendix B.

VI(d) Volatile Organic Compounds

Volatile organic compounds (VOC) are commonly referred to as organic solvents. These compounds are constituents of many degreasers, industrial cleaners, spot/stain removers, and paint thinners, and are found in some paints, varnishes and lacquers, many paint removers/strippers, many pesticides/herbicides, most dry cleaning chemicals, many printing inks and printing press chemicals, and most petroleum products including many types of fuels. Most of these compounds are flammable and toxic to varying degrees. Because of these characteristics, they are also a potential source of environmental pollution and pose a health hazard when present in drinking water.

Kansas has established regulations governing VOCs in drinking water. These regulations, K.A.R. 28-15-14, specify when a water systems must monitor their POE for VOC contaminants. Large water systems (serving populations of more than 3,300 people) are required to sample each POE at least annually. Small water systems serving populations of 3,300 or less are required to sample each POE at least once during the three year compliance period. If any contaminants are detected during this regular monitoring additional monitoring is required.

Table 7 shows a list of the regulated volatile organic compounds tested by KDHE.

TABLE 7.

REGULATED VOLATILE ORGANIC COMPOUNDS (VOC)

Compound Name	MCL	Uses
<i>Benzene</i>	0.005 mg/l	<i>fuels, pesticides, paints, pharmaceutical</i>
<i>Carbon tetrachloride</i>	0.005 mg/l	<i>degreasing agents, fumigants</i>
<i>Chlorobenzene</i>	0.1 mg/l	<i>industrial solvents, pesticides</i>
<i>cis-1,2 Dichloroethylene</i>	0.07 mg/l	<i>industrial solvents, chemical manufacturing</i>
<i>Dichloromethane</i>	0.005 mg/l	<i>paint strippers, refrigerants, fumigants</i>

<i>Ethylbenzene</i>	0.7	mg/l	gasoline, insecticides
<i>o</i> -Dichlorobenzene	0.6	mg/l	insecticides, industrial solvents
<i>p</i> -Dichlorobenzene	0.075	mg/l	insecticides, moth balls
<i>Styrene</i>	0.1	mg/l	plastics, synthetic rubber, resins
<i>Tetrachloroethylene</i>	0.005	mg/l	dry cleaning/industrial solvents
<i>trans</i> -1,2 Dichloroethylene	0.1	mg/l	industrial solvents, chemical manufacturing
<i>Trichloroethylene</i>	0.005	mg/l	paint strippers, dry cleaning, degreasers
<i>Vinyl chloride</i>	0.002	mg/l	plastics/synthetic rubber, solvents
<i>Xylenes</i>	10	mg/l	paints/inks, solvents, synthetic fibers, dyes
<i>1,1</i> Dichloroethylene	0.007	mg/l	paints, dyes, plastics
<i>1,1,1</i> Trichloroethane	0.2	mg/l	metal cleaning/degreasing agent
<i>1,1,2</i> Trichloroethane	0.005	mg/l	industrial degreasing solvents
<i>1,2</i> Dichloroethane	0.005	mg/l	gasoline, insecticides
<i>1,2</i> Dichloropropane	0.005	mg/l	soil fumigants, industrial solvents
<i>1,2,4</i> Trichlorobenzene	0.07	mg/l	industrial solvents

VOC MONITORING RESULTS

222 water systems monitored 412 POEs during 2003.

VOC monitoring during 2003 concluded with no water systems having any water samples test greater than the MCL for any VOC. No water system incurred a VOC monitoring violation during 2003.

VI(e) Synthetic Organic Compounds

Synthetic organic compounds (SOC) are man-made compounds, many of which are chlorinated and used as herbicides, pesticides, fungicides and insecticides. Kansas regulation, K.A.R. 28-15-14, requires water systems to monitor their drinking water for 33 SOC. MCLs for each of these SOC contaminants is set by Kansas regulation K.A.R. 28-15-13.

Water systems failing to monitor or incurring an MCL violation for any of the compounds listed in Table 8 must notify the public of such violation and provide proof of performing such public notice to KDHE.

Table 8 shows a list of the regulated synthetic organic compounds tested by KDHE.

TABLE 8.

REGULATED SYNTHETIC ORGANIC COMPOUNDS (SOC)

<u>Compound Name</u>	<u>MCL</u>	<u>Uses</u>
<i>Alachlor (Lasso)</i>	0.002 mg/l	herbicide
<i>Aldicarb</i>	0.003 mg/l	insecticide
<i>Aldicarb sulfoxide</i>	0.003 mg/l	insecticide
<i>Aldicarb sulfone</i>	0.003 mg/l	insecticide
<i>Atrazine (AtraneX, Crisazina)</i>	0.003 mg/l	herbicide

<i>Benzo(a)pyrene</i>	0.0002	mg/l	coal tar lining & sealants
<i>Carbofuran (Furadan 4F)</i>	0.04	mg/l	rootworm, weevil control
<i>Chlordane</i>	0.002	mg/l	termite control
<i>Dalapon</i>	0.2	mg/l	herbicide
<i>Dibromochloropropane(DBCP, Nemaflume)</i>	0.0002	mg/l	pesticide, nematocide, soil fumigant
<i>2,4-D (2,4-dichlorophenoxyacetic acid)</i>	0.07	mg/l	herbicide, defoliant
<i>2,4,5-TP (Silvex)</i>	0.05	mg/l	herbicide, defoliant
<i>Di(diethylhexyl)adipate</i>	0.4	mg/l	plasticizer
<i>Di(diethylhexyl)phthalate</i>	0.006	mg/l	plasticizer
<i>Dinoseb (2,4-dinitro-6-sec-butylphenol)</i>	0.007	mg/l	insecticide, herbicide
<i>Diquat</i>	0.02	mg/l	herbicide
<i>Endothall</i>	0.1	mg/l	herbicide, defoliant
<i>Endrin</i>	0.002	mg/l	insecticide
<i>Ethylene Dibromide (EDB, Bromofume)</i>	0.0005	mg/l	gasoline additive, fumigants, & solvents
<i>Glyphosate</i>	0.7	mg/l	herbicide
<i>Heptachlor (H-34, Heptox)</i>	0.0004	mg/l	termite control
<i>Heptachlor epoxide</i>	0.0002	mg/l	insecticide
<i>Hexachlorobenzene</i>	0.001	mg/l	by-product of solvents & pesticides
<i>Hexachlorocyclopentadiene</i>	0.05	mg/l	pesticide, fungicide
<i>Lindane</i>	0.0002	mg/l	pesticide
<i>Methoxychlor (DMDT, Marlath)</i>	0.04	mg/l	insecticide
<i>Oxamyl (Vydate)</i>	0.2	mg/l	insecticide
<i>Pentachlorophenol (PCP)</i>	0.001	mg/l	herbicide, fungicide, wood preservative
<i>Picloram (Tordon)</i>	0.5	mg/l	herbicide, defoliant
<i>Polychlorinated Biphenyls (PCB, Aroclors)</i>	0.0005	mg/l	herbicide
<i>Simazine</i>	0.004	mg/l	herbicide
<i>2,3,7,8 TCDD (Dioxin)</i>	3x10-8	mg/l	pesticide byproduct
<i>Toxaphene</i>	0.003	mg/l	pesticide

MONITORING FREQUENCY

During the first compliance period of 1993 through 1995, all required water systems performed monitoring for all SOC's listed in Table 7 above, with the exception of the chemicals previously waived. **Atrazine** and **ethylene dibromide (EDB)** were the only contaminants in the SOC group that were detected over their MCL during this first compliance period.

Based on these monitoring results, KDHE (with EPA approval) allowed water systems to only monitor for atrazine and EDB during the subsequent compliance period of 1996 through 1998. Other than atrazine, a widely use herbicide, no other contaminants were detected by themselves. Alachlor, the only other pesticide detected, always appeared in conjunction with atrazine.

Water systems utilizing groundwater are required to monitor each POE at least once during the current three year compliance period (2002-2004). Small systems (population# 3,300) utilizing surface water are required to monitor their POE a minimum of one quarter during the three year compliance period, collecting the water sample during the months of May or June. Large surface water systems (population > 3,300) are

required to monitor their POE at least annually during the months of May or June. Water systems using groundwater that had no SOC detected during the first compliance period (1993-95), were tested for atrazine during 1996 through 1998 using an immunoassay method (EPA Method 4670). This immunoassay method was used because it is highly sensitive in detecting any contaminant in the triazine chemical family and is one fourth the cost of the regular drinking water method (EPA Method 507).

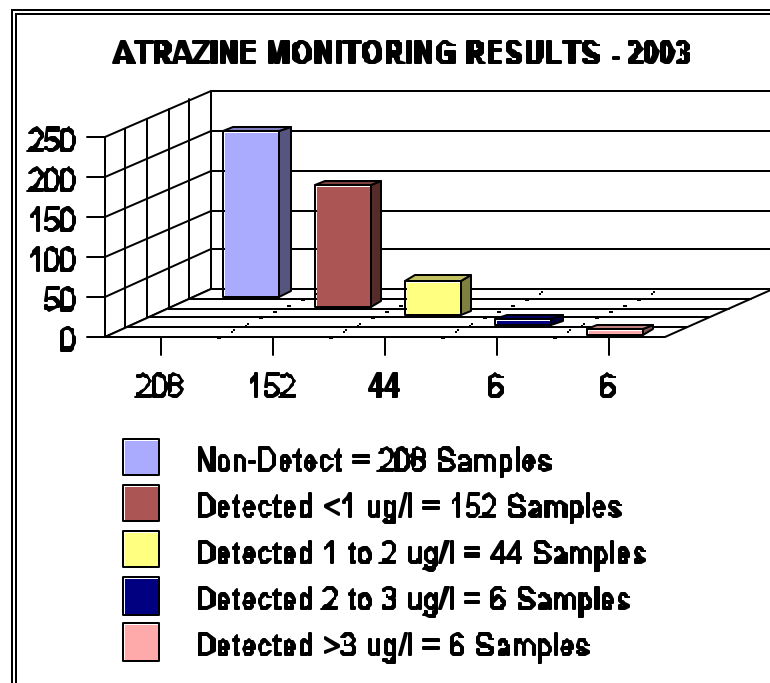
Groundwater systems with previous SOC detects and all surface water systems were required to perform the regular atrazine testing using EPA Method 507. This Method also detects alachlor, the only other pesticide detected during the previous compliance period.

SOC MONITORING RESULTS

A total of 370 water systems collected water samples from 473 POEs for atrazine testing during 2003. None of these water systems exceeded the MCL of 3.0 **micrograms per liter (F g/l)** (yearly running average).

Of the 473 POE water samples collected during 2003, 208 samples (or 44%) percent showed atrazine not detected, 152 detected atrazine at concentrations below 1.0 ug/l, 44 detected concentrations between 1.0 and 2.0 ug/l, 6 detected concentrations between 2.0 and 3.0 ug/l, and 6 detected concentrations greater than the MCL of 3.0 ug/l. (Running yearly average put all 6 under the MCL) See Figure 8.

FIGURE 8.



VII. UNREGULATED CONTAMINANTS

The 1996 SDWA Amendments require EPA to mandate monitoring for unregulated contaminants (UCMR) of all community public water supply systems and non-transient, non-community water systems serving over 10,000 people, and randomly selected small water supply systems. The unregulated contaminant monitoring information will be used to develop a database to help guide EPA's efforts to select drinking water contaminants for future regulation. Effective January 1, 2001, there are three levels of monitoring, involving different numbers of systems and different contaminant lists. All water systems must all use an EPA designated laboratory following UCMR quality control specifications. The three levels are: (1) Assessment monitoring for List 1 contaminants (must be done within the three years of 2001 through 2003). (2) Screening Survey for List 2 contaminants, and (3) Pre-Screen Testing, which is only required for a small subset of systems that are most vulnerable to List 3 contaminants.

Results must be reported to the public under Consumer Confidence Rule (CCR) and Public Notification requirements.

VIII. LEAD AND COPPER

High exposure to metals has long been recognized as a cause of adverse health effects in humans. Lead has been singled out because of its possible appearance in drinking water and its high toxicity to humans. Copper, although an essential nutrient, also poses a health threat at elevated levels. Young children are especially susceptible to the toxic effects of these metals.

Lead and copper found in water pipes and in old plumbing solder can leach into the drinking water. Besides leaching from water pipes and solder, lead and copper can also leach from brass water faucet fixtures. As a step to reduce lead in drinking water, regulations prohibit the use of lead water pipes and lead plumbing solder.

KDHE regulations govern lead and copper in drinking water and can be found at K.A.R. 28-15-22. These regulations apply to all community water systems and non-transient non-community water systems. These water systems are required to monitor for lead and copper on a scheduled basis. If monitoring results indicate unacceptable levels of lead or copper, the water system is required to initiate corrosion control treatment techniques to minimize lead and/or copper contamination. Action levels set by this regulation are 0.015 milligrams per liter (mg/l) (15 micrograms per liter (Fg/l)) for lead, and 1.3 mg/l (1,300 Fg/l) for copper. If the 90th percentile tap water sample exceeds either lead or copper, it represents a long-term risk to health.

LEAD AND COPPER MONITORING RESULTS

Four hundred and ninety-nine public water systems were scheduled to monitor for lead and copper during 2003. Eight systems incurred monitoring violations by failing to perform their required routine and follow-up tap sampling. These eight water systems were required to complete public notification.

Four systems exceeded the copper action level, and four systems exceeded the lead action level. All eight systems were required to implement corrosion control treatment or modify existing treatment. Three systems failed to submit the required treatment recommendation. Notices of violation were sent to the three systems requiring them to complete public notice.

These lead and copper violations translate to a 98% compliance rate for monitoring and a 97% compliance rate for treatment installation and public education. The names of the systems which incurred violations of this regulation during 2003 are listed in Appendix B.

COMPLIANCE AND ENFORCEMENT

A consent agreement was issued to:

- 1) Cherokee Co. RWD #1 - lead and copper monitoring violation

IX. DISINFECTION BY-PRODUCTS

To ensure drinking water is safe and pathogen free it must be disinfected. The most commonly used method of disinfection is chlorination. Unfortunately, the chlorine added to water to kill harmful microorganisms also combines with organic matter naturally present in water to form chemical compounds called **trihalomethanes** or **THMs**. These THMs are suspected of being carcinogens, which has been suggested to cause bladder cancer and reproductive effects in humans.

Beginning January 1, 2002, the Stage 1 Disinfectants and Disinfection By-Product Rule (DBPR) required more monitoring and adopted new MCLs to improve quality of drinking water and increase protection to public health. This affects all surface water systems and ground water systems under the direct influence of surface water serving 10,000 or more people. The MCL for total trihalomethanes (TTHM) has been lowered to 80 parts per billion (ppb) and haloacetic acids (HAA5) MCL is 60 ppb. The MCLs will reduce exposure to specific DBPs from the use of ozone (byproduct: bromate), chlorine dioxide (byproduct: chlorite), and chlorine (byproduct: Total Trihalomethanes and five Haloacetic Acids (HAA5)).

In addition, the Stage 1 DBPR established a treatment technique that requires conventional filtration systems to remove specific percentages of organic materials measured as total organic compound (TOC) that may react with disinfection byproduct precursors (DBPPs) to form both regulated and non-regulated DBPs.

Table 9 shows the Disinfection Byproduct contaminants which systems must monitor in drinking water.

TABLE 9.
STAGE 1 DBPR

Disinfection By-Product	MCLG (mg/l)	(MCL (mg/l)
Total Trihalomethanes (TTHM)	N/A	0.080
Chloroform	N/A	N/A
Bromodichloromethane	zero	N/A
Bromoform	zero	N/A
Dibromochloromethane	0.06	N/A
Five Haloacetic Acids (HAA5)	N/A	0.060
Monochloroacetic Acid	N/A	N/A
Dichloroacetic Acid	zero	N/A
Trichloroacetic Acid	0.3	N/A
Monobromoacetic Acid	N/A	N/A
Dibromoacetic Acid	N/A	N/A
Chlorite	0.8	1.0
Bromate	zero	0.010

MONITORING RESULTS FOR THMs

Compliance for TTHM and HAA5 MCLs is based on a running annual arithmetic average, computed quarterly, of quarterly averages of all samples. Compliance for the chlorite MCL is based on an arithmetic average of each three samples set taken in the distribution system. Compliance for the bromate MCL is based on a running annual arithmetic average, computed quarterly, of monthly samples.

Eighteen water systems were required to monitor for THMs during 2003. Most large water systems in Kansas are surface water systems. Surface water generally has more suspended and dissolved organic

material than groundwater. Three water systems received 14 MCL violations during 2003. One system received 2 reporting violations. A 91 percent compliance rate was achieved for this regulation during 2003. The names of the systems which incurred violations of this regulation during 2003 are listed in Appendix B.

TIME TABLE FOR DBPR REQUIREMENTS

January 1, 2003 - PWSs that serve fewer than 10,000, and use surface water or groundwater under the direct influence of surface water and/or GWUDI as a source should begin monitoring to determine Step 1 TOC removal before the compliance date.

December 31, 2003 - Systems which received an extension from the state to install GAC or membranes must comply with the Stage 1 DBPR.

January 1, 2004 - PWSs that serve fewer than 10,000 and all groundwater CWSs and NTNCWs must comply with the MCLs for TTHM, HAA5, bromate, and chlorite.

January 1, 2004 - PWSs that serve fewer than 10,000 and all groundwater CWSs and NTNCWS must comply with the MRDLs (maximum residual disinfectant levels) for chlorine, chloramines, and chlorine dioxide.

January 1, 2004 - PWSs that serve fewer than 10,000 and all groundwater TNCWS that use chlorine dioxide must comply with the MRDL for chlorine dioxide.

These rules are the first in a series of rules that will continue to address the public health concerns associated with microbial pathogens and chemical disinfectants.

X. SURFACE WATER TREATMENT

Almost one third (378) of all water systems in Kansas use surface water for part or all of their drinking water. This includes systems that purchase their water. These water systems provide drinking water to about two thirds of the State's population. Water for these systems originates from rivers or man-made reservoirs located throughout the state.

Unlike most groundwater that is protected by the earth's crust, surface water is exposed to the atmosphere and surface runoff. This exposure makes surface water more vulnerable to contamination than most groundwater. For this reason, a regulation has been developed specifically for surface water and groundwater under the influence of surface water, such as springs and shallow wells which are susceptible to surface contamination.

Kansas regulation K.A.R. 28-15-21 addresses specific treatment requirements for surface water. This regulation requires that surface water systems, "provide filtration and disinfection treatment of source water." This regulation is known as the **surface water treatment rule** or **SWTR**.

This regulation requires water systems to filter the water, and keep a record of turbidity readings of the treated water entering the distribution system. High turbidity levels adversely affect the efficiency of the disinfection process, contribute to the undesirable formation of **trihalomethanes (THMs)**, and indicate

viruses or Giardia Lamblia may be present. For these reasons turbidity limits are set depending on the type of filtration used.

The maximum allowable for any single finished water turbidity reading is 5.0 **nephelometric turbidity units (NTU)**. Additionally, for a system to be in compliance, at least 95 percent of the filtered water samples during a month must have turbidity levels less than or equal to 0.5 NTU.

Cryptosporidium is a protozan associated with the disease cryptosporidiosis in humans. The disease can be transmitted through ingestion of drinking water, person-to-person contact, or other exposure routes. Cryptosporidiosis may cause acute diarrhea, abdominal pain, vomiting, and fever that last 1-2 weeks in healthy adults, but may be chronic or fatal in immunocompromised people.

Giardia lamblia is a protozoan which can survive in water for 1 to 3 months; it is associated with the disease giardiasis. Ingestion of this protozoan in contaminated drinking water, exposure from person-to-person contact, and other exposure routes may cause giardiasis. The symptoms of this gastrointestinal disease may persist for weeks or months and include diarrhea, fatigue, and cramps.

These regulations also require that the filtering process in conjunction with the disinfection treatment remove or inactivate 99.99 percent of viruses and 99.9 percent of Giardia Lamblia cysts. The presence of viruses in drinking water can cause stomach cramps and/or gastroenteritis (intestinal distress). The chlorine (disinfectant) concentration in the water entering the distribution system is required to be at least 0.2 mg/l of free chlorine or 1.0 mg/l of combined chlorine. Chlorine residual readings must be taken daily at set intervals and recorded by the water operator. Turbidity and disinfection records are required to be submitted to KDHE on a monthly basis for compliance determination.

SURFACE WATER MONITORING RESULTS

There were a total of 109 systems monitoring for compliance (including systems using groundwater under the influence of surface water, surface water and a combination of ground water and surface water) under the SWTR regulations. During 2003, 10 water systems incurred 18 violations of the surface water treatment technique regulation. Eight water systems incurred 12 monitoring, or routine/repeat violations.

These water systems had a monitoring compliance rate of 91 percent and a treatment technique compliance rate of 93 percent. Eighteen systems performed public notification requirements for such violations to their customers. The names of the systems which incurred violations of this regulation during 2003 are listed in Appendix B.

XI. RADIONUCLIDES

Most radiation occurs naturally and is readily present in the environment. Radiation in groundwater commonly occurs when water comes in contact with the natural decay of uranium in rocks and soils. In most circumstances, this radiation occurs at such low levels that it is harmless to human health. The purpose of the Radionuclides Rule is to reduce the exposure to radionuclides in drinking water, and therefore, to reduce the risk of cancer and toxic kidney effects from uranium. This rule will also improve public health protection by reducing exposure to all radionuclides.

Occasionally, in some areas of the state, these radiation levels occur at higher levels which may present a risk to human health. For this reason, regulations which have been adopted require communities water systems to monitor their drinking water for radionuclides. Only community water systems are required to monitor their drinking water for radionuclides.

The final rule became effective December 8, 2003. The rule regulates uranium for the first time. Uranium now has a MCL of 30 ug/L. Water systems with monitoring results greater than the MCL will be required to monitor quarterly until four consecutive quarters are below the MCL. These water systems will also be required to issue a public notice informing their customers of the MCL violation. Prior to 2002, there was no standard for uranium, but monitoring started in 1984. The rule retains the existing MCLs for combined radium 226 and radium 228, gross alpha particle radioactivity, and beta particle and photon activity.

Table 10 lists the radiological contaminants along with their common sources, and the corresponding MCLs as set by Kansas regulations (K.A.R. 28-15-13 (d) (1)).

**TABLE 10.
RADIONUCLIDES**

CONTAMINANT	SOURCES / USES	MCL
Gross alpha	natural decay of uranium in rocks and soil	15 pCi/l
Gross beta	natural decay of uranium in rocks and soil, nuclear weapon production, pharmaceuticals	50 pCi/l or 4 mrem/yr
Radium 226 & 228	natural decay of uranium in rocks and soil	5 pCi/l
Strontium-90	artificial isotope, used in research and medicine, in industrial density measuring devices, in atomic batteries, in luminous paint	8 pCi/l
Tritium	man-made isotope, used as chemical tracer in research, in nuclear weapons production, in luminous instrument dials	20,000 pCi/l
Uranium	natural decay of uranium in rocks and soil	30 ug/l

Key: pCi/l = picoCurie per liter
mrem/yr = millirem per year

MONITORING RESULTS FOR RADIONUCLIDES

One water system incurred one MCL violations for combined radium 226 & 228 during 2003. The population affected by this MCL violation was 3,355. This water system was notified by KDHE of the MCL violation and required to issue public notice. No water systems had radionuclide monitoring violations during 2003. The name of the system which incurred a radiological MCL violation is listed in Appendix B.

MONITORING RESULTS FOR URANIUM

No water system incurred a MCL violation for uranium during 2003.

XII. CONSUMER CONFIDENCE REPORT (CCR)

The Consumer Confidence Report (CCR) rule is a requirement of the 1996 Safe Drinking Water Act. It gives consumers more information on their drinking water quality and opportunities to get involved in protecting their source of water.

Under the CCR rule, all community water systems (CWSs) are required to provide customers with an annual water quality report or CCR. EPA specified certain health risk language to be included in the reports, when regulated contaminants are detected. CCRs summarize information to help educate and inform customers about their water system. Water supply systems with a population over 100,000, must post their CCR on the Internet.

The CCR rule required the first report to contain data used to determine compliance in calendar year 1998, and to be delivered by October 1, 1999. All subsequent annual reports are due by July 1 and will include information from the previous calendar year.

By July 1, 2003, 910 community water systems were to deliver the CCR for calendar year 2002 to their customers, and send a copy of the actual report and a certificate of delivery to KDHE. The number of facilities in violation for not delivering a copy of their CCR to their customers by July 1, 2003 was 153. Notices of the violation were sent to the facilities on August 27, 2003, followed by phone calls to non-responding water systems. Ninety-nine point nine (99.9 %) percent of community water systems are in compliance, 1 facility is still in violation - the City of Treece.

XIII. OPERATOR CERTIFICATION

The State of Kansas, through the Department of Health and Environment (KDHE), requires all public water supply systems to have a certified operator in direct responsible charge of the water treatment and water distribution systems. The operators must be certified by the department at the same classification of the plant or water distribution system. The facilities are classified according to complexity, with Class IV being the most complex. If a water supply system prefers, they may contract with a certified operator in lieu of maintaining a full time person on staff.

SYSTEM CLASSIFICATION

Table 11 list the description of the water supply system classification.

**TABLE 11
SYSTEM CLASSIFICATION**

CLASS	YRS. EXP.	DESCRIPTION	POPULATION SERVED
Small System	6 Months	1. Distribution System Only 2. Chlorination of Groundwater only	All <501
I	1 year	1.Chlorination of Groundwater only 2. Treatment of Groundwater*	501 - 1,500 <501
II	1 year	1. Chlorination of Groundwater only 2. Treatment of Groundwater* 3. Treatment of Surface Water	1,501 - 5,000 501 - 2,500 <2,501
III	2 years	1. Chlorination of Groundwater only 2. Treatment of Groundwater or Surface Water*	5,001 - 20,000 2,501 - 10,000
IV	2 years	1. Chlorination of Groundwater only 2. Treatment of Groundwater or Surface Water*	>20,000 >10,000

* Includes iron and manganese removal; softening; membrane filtration; coagulation, sedimentation, and filtration, recarbonation; and chemical addition (other than chlorine)

Table 12 shows the number of PWSs by classification, and the number of certified operators by class.

TABLE 12

CLASSIFICATION	# PWS BY CLASSIFICATION	# CERTIFIED OPERATORS
Small Systems	726	455
Class I	138	441
Class II	132	184
Class III	46	184
Class IV	25	419

KDHE has awarded the Kansas Rural Water Association (KRWA) the OIT Emergency Technical/Training Grant. Upon the request of KDHE, KRWA will provide emergency technical assistance to public water supply systems who lose their sole certified operator.

XIV. SUMMARY

Appendix A lists the number of MCL, treatment technique, and monitoring/reporting violations by regulated parameter. This information is entered into the State Drinking Water Information System (SDWIS). There were no violations for the majority of parameters. The following is a summary of parameters which incurred violations.

Bacteriological monitoring resulted in 35 water systems having coliform MCL violations, 5 of which also incurred acute MCL violations. These monitoring results translate to 96 percent of all systems being in compliance. The population affected by these MCL violations was 70,711, or less than 7 percent of the population served by all water systems. The number of systems with total coliform major monitoring violations was 32, with 48 violations. The population affected by these monitoring violations was 5,728 or 0.3 percent of the population served by all systems. Overall, 198 water systems had at least one bacteriological MCL or monitoring violation during 2003. This means that 871 water systems were in compliance with the Total Coliform Rule.

In the organic contaminant group (VOCs and SOCs), no water systems incurred a monitoring or MCL violation during 2003.

In the inorganic contaminants (IOCs) group, nitrate and selenium were the only contaminants detected above the MCL during 2003. Nitrate MCL or monitoring violations occurred in 49 out of 729 systems monitoring. This translates to a compliance rate of 93 percent of water systems in compliance. The population affected by these nitrate MCL violations was 28,952, or less than 1 percent of the total population served in Kansas.

Selenium was detected above the MCL in one of the 296 water systems required to monitor during 2003. This translates to 99 percent of water systems in compliance. The population affected by the PWS with the selenium MCL violation was 80, or less than 1 percent of the total population served in Kansas.

Lead and copper monitoring resulted in 8 water systems with monitoring violations. The number of systems monitoring for lead and copper was 499. During 2003, 98 percent of water systems were in compliance with monitoring requirements and 97% were in compliance for treatment installation. Four systems exceeded the copper action level. 4 systems exceeded the lead action level. Three systems failed to submit a treatment recommendation.

Disinfection By-Product monitoring for THMs at eighteen water systems resulted in 1 water system receiving 2 MCL violations during 2003. These results translate to a THM compliance rate of 99 percent during 2003.

12 out of 109 water systems using surface water incurred Surface Water Treatment Rule (SWTR) violations. Of the 12 systems with violations, 9 water systems had 14 treatment technique violations, leaving 92 percent of water systems in compliance. 3 water systems had 7 monitoring/reporting violations, leaving 97 percent of water systems in compliance. Collectively, these results placed 89 percent of all systems regulated by the SWTR in compliance during 2003.

Radionuclide monitoring resulted in one water system detecting radium 226/228 above the MCL. This amounts to a compliance rate of 99 percent with less than one percent of systems being in violation. The population affected by this radium MCL violation was 3,355.

910 community water systems were to deliver the CCR for calendar year 2002 to their customers by July 1, 2003. 153 water systems were in violation of the July 1 due date. One public water system still has a monitoring violation. The population affected by the 1 water system is 166. This amounts to 99.9 percent of water systems being in compliance.

The overall compliance rate for all Kansas public water supplies (CWSs, NTNCWSs, and TNCWSs) with drinking water regulations during 2003 was 82 percent. A total of 195 water systems incurred at least one violation of a drinking water regulation. This left 874 water systems operating out of the 1,069 water systems having no violations during 2003.

The Government Performance Results Act (GPRA) establishes a goal of 95% of the population served by community water systems not reporting any health-based violations.

FY	Violations	Total Systems	Systems w/Violations	Percentage Systems	Population w/violations	Total Pop.	Percent Pop.
2000	154	919	93	90%	121,863	2,418,480	95%
2001	112	918	58	94%	136,397	2,426,588	94%
2002	130	918	80	91%	86,361	2,512,616	97%
2003*	125	912	84	91%	287,363	2,581,726	89%

*The population score in 2003 was impacted by the large (>10,000 population) systems with Stage 1 DBPR MCL violations. Treatment modifications and O & M changes have lowered the concentrations of these contaminants in these systems to below the MCL.

The following table, shows the percentage of all water systems that had no monitoring and/or MCL violations occurring during 2003 for each specific drinking water regulation.

TABLE 13.

**WATER SYSTEMS COMPREHENSIVE COMPLIANCE SUMMARY
FOR ALL VIOLATIONS**

REGULATION	% COMP.
Total Coliform Rule - Non-Acute Monitoring Maj/Min	97 % 89 %
Nitrate / Nitrite	97 %
Inorganic Chemicals (IOCs)	99 %
Volatile Organic Compounds (VOCs)	100 %
Synthetic Organic Compounds (SOCs)	100 %
Total Trihalomethanes (TTHMs)	91 %
Lead and Copper Rule - Monitoring Treatment Installation	98 % 97%
Surface Water Treatment Rule - Monitoring Treatment Technique	97 % 92 %
Radionuclides Rule	99 %
Consumer Confidence Rule	99 %

Table 14, shows a comparison of the overall compliance percentages for all water systems over the last three years.

TABLE 14.
WATER SYSTEMS COMPLIANCE COMPARISON
FOR 2001, 2002 AND 2003

REGULATION	2001	2002	2003
Total Coliform Rule	Non-Acute - 96% Mon. Major/Min.- 97%	Non-Acute - 96% Mon. Major/Min.- 85%	Non-Acute - 97% Mon. Major/Min.- 89%
Nitrate	97%	97%	97%
Inorganic Chemicals (IOCs)	99%	99%	99%
Volatile Organic Compounds (VOCs)	100%	100%	100%
Synthetic Organic Compounds (SOCs)	100%	100%	100%
Total Trihalomethanes (TTHMs)	93%	91%	91%
Lead and Copper Rule- Monitoring Treatment Install.	94%	74% 97%	98% 97%
Surface Water Treatment - Monitoring Treatment Technique	92%	92%	97 % 92 %
Radionuclides Rule	99%	99%	99%
Consumer Confidence Rule	99%	99%	99%

DEFINITIONS

Action Levels - Used in place of MCL's. Triggers additional requirements but exceeding action levels does not constitute and MCL.

Cryptosporidium - A protozoan that causes cryptosporidiosis. Symptoms include acute intestinal distress and fever.

DBPR - Stage 1 Disinfection By-Product Rule requires conventional filtration systems to remove organic material from the water.

Detection - Some amount of contaminant was found, not necessarily in an amount that exceeds the MCL.

E. Coli - Escherichia coli. A bacteria which can cause acute intestinal distress.

Fecal Coliform - A bacteria used to indicate the presence of other disease causing organisms.

Fibers Per Liter - The number of fibers found in one liter of water and is the unit of measurement for asbestos. MFL is the abbreviation for Million Fibers per Liter.

Giardia Lamblia - A protozoan which causes giardiasis. Symptoms include diarrhea, fatigue and cramps.

Haloacetic Acids (HAA5) - Byproduct of drinking water disinfection.

IESWTR - Interim Enhanced Surface Water Treatment Rule. Purpose is to improve public health by controlling microbial contaminants, particularly Cryptosporidium.

IOC - Inorganic Compounds. Naturally occurring minerals, metals and salts.

MCL - Maximum Contaminant Level. The greatest concentration of a chemical allowed by EPA.

MCLG - Maximum Contaminant Level Goal. The level of a contaminant below which there is no known risk to health.

MCL Violation - Finding a contaminant in an amount greater than that allowed by EPA.

MG/L - Milligrams per liter. Roughly equivalent to ppm.

ND - Not Detected

NTU - Nephelometric turbidity units.

PCB - Polychlorinated Biphenyl.

pCi/l - Picocuries per liter. Unit of measurement for radioactive substances. A pCi/l is equivalent to two atoms disintegrating per minute per liter.

PPB - Parts per billion. Roughly equivalent to ug/l.

Regulated - Contaminants which require monitoring with specific MCL's which are set by EPA.

SOC - Synthetic Organic Compounds. Chemicals commonly used in pesticides, herbicides, plastics and fuels.

SWTR - Surface Water Treatment Rule. This regulation requires that surface water systems, "provide filtration and disinfection treatment of source water".

TOC - Total Organic Carbon. TOC has no health effects. However, total organic compound provides a medium for the formation of disinfection byproducts. These byproducts include TTHMs and HAA5s.

TTHM - Total Trihalomethanes. A byproduct of the disinfection process which have certain health effects.

Treatment Technique (TT) - A required treatment method used to reduce contaminants.

Turbidity - Suspended materials which cause water to become cloudy.

UG/L - Micrograms per liter. Roughly equivalent to ppb.

VOC - Volatile Organic Compounds. Chemicals that evaporate into the air. Commonly found in gasoline, paint, solvents, plastics and adhesives.

Appendix A
Violations Table
(with SDWIS Codes)

JULY
2004

State: KANSAS

Reporting
Interval: 2003 Calendar Year

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Organic Contaminants (VOC / SOC)							
2981	1,1,1-Trichloroethane	0.2	0	0			0	0
2977	1,1-Dichloroethylene	0.007	0	0			0	0
2985	1,1,2-Trichloroethane	0.005	0	0			0	0
2378	1,2,4-Trichlorobenzene	0.07	0	0			0	0
2931	1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0	0			0	0
2980	1,2-Dichloroethane	0.005	0	0			0	0
2983	1,2-Dichloropropane	0.005	0	0			0	0
2063	2,3,7,8-TCDD (Dioxin)	3x10 ⁻⁸	0	0			0	0
2110	2,4,5-TP	0.05	0	0			0	0
2105	2,4-D	0.07	0	0			0	0

State:	KANSAS
Reporting Interval:	2003 Calendar Year

**JULY
2004**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2265	Acrylamide				0	0		
2051	Alachlor	0.002	0	0			0	0
2050	Atrazine	0.003	0	0			0	0
2990	Benzene	0.005	0	0			0	0
2306	Benzo[a]pyrene	0.0002	0	0			0	0
2046	Carbofuran	0.04	0	0			0	0
2982	Carbon tetrachloride	0.005	0	0			0	0
2959	Chlordane	0.002	0	0			0	0
2380	cis-1,2-Dichloroethylene	0.07	0	0			0	0
2031	Dalapon	0.2	0	0			0	0
2035	Di(2-ethylhexyl)adipate	0.4	0	0			0	0
2039	Di(2-ethylhexyl)phthalate	0.006	0	0			0	0
2964	Dichloromethane	0.005	0	0			0	0
2041	Dinoseb	0.007	0	0			0	0
2032	Diquat	0.02	0	0			0	0

State:	KANSAS
Reporting Interval:	2003 Calendar Year

**JULY
2004**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2033	Endothall	0.1	0	0			0	0
2005	Endrin	0.002	0	0			0	0
2257	Epichlorohydrin				0	0		
2992	Ethylbenzene	0.7	0	0			0	0
2946	Ethylene dibromide	0.00005	0	0			0	0
2034	Glyphosate	0.7	0	0			0	0
2065	Heptachlor	0.0004	0	0			0	0
2067	Heptachlor epoxide	0.0002	0	0			0	0
2274	Hexachlorobenzene	0.001	0	0			0	0
2042	Hexachlorocyclopentadiene	0.05	0	0			0	0
2010	Lindane	0.0002	0	0			0	0
2015	Methoxychlor	0.04	0	0			0	0
2989	Monochlorobenzene	0.1	0	0			0	0
2968	o-Dichlorobenzene	0.6	0	0			0	0
2969	para-Dichlorobenzene	0.075	0	0			0	0

State:	KANSAS
Reporting Interval:	2003 Calendar Year

**JULY
2004**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2383	Total polychlorinated biphenyls	0.0005	0	0			0	0
2326	Pentachlorophenol	0.001	0	0			0	0
2987	Tetrachloroethylene	0.005	0	0			0	0
2984	Trichloroethylene	0.005	0	0			0	0
2996	Styrene	0.1	0	0			0	0
2991	Toluene	1	0	0			0	0
2979	trans-1,2-Dichloroethylene	0.1	0	0			0	0
2955	Xylenes (total)	10	0	0			0	0
2020	Toxaphene	0.003	0	0			0	0
2036	Oxamyl (Vydate)	0.2	0	0			0	0
2040	Picloram	0.5	0	0			0	0
2037	Simazine	0.004	0	0			0	0
2976	Vinyl chloride	0.002	0	0			0	0
	Disinfectant By-Product							
0400	Failure to provide mon. plan	N/A	0	0			0	0

State:	KANSAS
Reporting Interval:	2003 Calendar Year

**JULY
2004**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
0999	Chlorine	4	5	2			0	0
1008	Chlorine Dioxide	.8	0	0			0	0
1009	Chlorite/ClO2	1.0	0	0			0	0
2456	HAA5 MCL	0.060	4	1			0	0
2920	Total Organic Carbon (TOC)	N/A	0	0	3	1	2	2
2940	Total Organic Carbon (TOC)	N/A	0	0			0	0
2950	Total Trihalomethanes	0.080	3	2			0	0
	Subtotal		12	5	3	1	2	2

State:	KANSAS
Reporting Interval:	2003 Calendar Year

**JULY
2004**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Inorganic Contaminants (IOC)							
1074	Antimony	0.006	0	0			0	0
1005	Arsenic	0.05	0	0			0	0
1094	Asbestos	7 million fibers/l# 10 µm long	0	0			0	0
1010	Barium	2	0	0			0	0
1075	Beryllium	0.004	0	0			0	0
1015	Cadmium	0.005	0	0			0	0
1020	Chromium	0.1	0	0			0	0
1024	Cyanide (as free cyanide)	0.2	0	0			0	0
1025	Fluoride	4.0	0	0			0	0
1035	Mercury	0.002	0	0			0	0
1040	Nitrate	10 (as Nitrogen)	63	30			11	10
1041	Nitrite	1 (as Nitrogen)	0	0			0	0

State:	KANSAS
Reporting Interval:	2003 Calendar Year

**JULY
2004**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
1045	Selenium	0.05	4	1			0	0
1085	Thallium	0.002	0	0			0	0
1038	Total nitrate and nitrite	10 (as Nitrogen)	0	0			0	0

State:	KANSAS
Reporting Interval:	2003 Calendar Year

**JULY
2004**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Radionuclide MCLs							
4000	Gross alpha	15 pCi/l	0	0			0	0
4010	Radium-226 and radium-228	5 pCi/l	1	1			0	0
4101	Gross beta	4 mrem/yr	0	0			0	0
	Subtotal Water Chemistry		68	32			11	10

State:	KANSAS
Reporting Interval:	2003 Calendar Year

**JULY
2004**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Total Coliform Rule							
21	Acute MCL violation	Presence	5	5				
22	Non-acute MCL violation	Presence	33	30				
23,25	Major routine and follow up monitoring						52	36
28	Sanitary survey						State initiates Sanitary Survey	State initiates Sanitary Survey
	Subtotal		38	35 ¹			52	36

¹Includes the 5 acute violations and violators. These 5 systems incurred an acute (fecal) coliform violation (Code 21), and also had a total coliform violation (Code 22) the same month. Hence, subtotal number of violations is higher than the number of PWSs due to the fact some PWSs incurred more than one violation.

State:	KANSAS
Reporting Interval:	2003 Calendar Year

**JULY
2004**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Surface Water Treatment Rule (SWTR)							
	Filtered systems							
36	Monitoring, routine/repeat						7	3
38	Indiv. Filter Monitoring Vio.						0	0
41	Treatment techniques				14	9		
	Unfiltered systems							
31	Monitoring, routine/repeat						0	0
42	Failure to filter				0	0		
	Subtotal				14	9	7	3

State:	KANSAS
Reporting Interval:	2003 Calendar Year

**JULY
2004**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Lead and Copper Rule							
51	Initial lead and copper tap M/R						0	0
52	Follow-up or routine lead and copper tap M/R						7	7
57	Treatment Recommendation Violation				3	3		
65	Public education				0	0		
	Subtotal				3	3	7	7

1. Values are in milligrams per liter (mg/l), unless otherwise specified.

SDWIS CODES	Consumer Confidence Rule	Monitoring/ Reporting Number of Violations	Monitoring/ Reporting Number of Systems With Violations	Treatment Techniques Number of violations	Treatment Techniques Number of Systems With Violations	Significant Monitoring/Reporting Number of Violations	Significant Number of Systems W/Vio.
71	Failure to Report					150	150
72	Report Inadequacy					3	3

Definitions for the Violations Table above

The following definitions apply to the Summary of Violations table.

Filtered Systems: Water systems that have installed filtration treatment [40 CFR 141, Subpart H].

Inorganic Contaminants: Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. Regulations have established MCLs for 15 inorganic contaminants [40 CFR 141.62].

Lead and Copper Rule: This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations of the Lead and Copper Rule in the following six categories:

Initial lead and copper tap M/R: A violation where a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.

Follow-up or routine lead and copper tap M/R: A violation where a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

Treatment installation: Violations for a failure to install optimal corrosion control treatment system or source water treatment system which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in both categories].

Lead service line replacement: A violation for a system's failure to replace lead service lines on the schedule required by the regulation.

Public education: A violation where a system did not provide required public education about reducing or avoiding lead intake from water.

Maximum Contaminant Level (MCL): The highest amount of a contaminant that is allowed in drinking water. MCLs ensure that drinking water does not pose either a short or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.

Monitoring: Regulations specifies which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system that does not follow this schedule or methodology is in violation [40 CFR 141].

States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the States. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

Organic Contaminants: Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through runoff from cropland or discharge from factories. Regulations set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

Radionuclides: Radioactive particles which can occur naturally in water or result from human activity. Regulations set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:

Gross alpha: A violation for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes radon and uranium.

Combined radium-226 and radium-228: A violation for combined radiation from these two isotopes above MCL of 5 pCi/L.

Gross beta: A violation for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

SDWIS Code: Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.

Surface Water Treatment Rule (SWTR): The SWTR establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the “Surface Water Treatment Rule” are to be reported for the following four categories:

Monitoring, routine/repeat (for filtered systems): A violation for a system’s failure to carry out required tests, or to report the results of those tests.

Treatment techniques (for filtered systems): A violation for a system’s failure to properly treat its water.

Monitoring, routine/repeat (for unfiltered systems): A violation for a system’s failure to carry out required water tests, or to report the results of those tests.

Failure to filter (for unfiltered systems): A violation for a system's failure to properly treat its water. Data for this violation code will be supplied to the States by EPA.

Total Coliform Rule (TCR): The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:

Acute MCL violation: A violation where the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby violating the rule.

Non-acute MCL violation: A violation where the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.

Major routine and follow-up monitoring: A violation where a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]

Sanitary Survey: A major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.

Treatment Techniques: A water disinfection process that is required instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.

Unfiltered Systems: Systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].

Violation: A failure to meet any state or federal drinking water regulation. **Most violations require the water system to perform public notification to its consumers of said violation.**

APPENDIX B

LIST OF PUBLIC WATER SUPPLY SYSTEMS

WITH MCL VIOLATIONS

JULY 2004

PWS SYSTEMS REPORTING CHLORINE RESIDUAL VIOLATIONS: 2003

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	# VIO.
1	PWWSD #11 - BONE CREEK	A6500	KS2003725	0	GIRARD	66743	1
2	OLATHE	R6000	KS2009115	109571	OLATHE	66051	3

TOTAL POPULATION AFFECTED: 109571
TOTAL VIOLATIONS: 4
TOTAL PWS SYSTEMS: 2

PWS SYSTEMS WITH HAA5 MCL VIOLATIONS: 203

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	# VIO.
1	PWWSD #11 - BONE CREEK	A6500	KS2003725	0	GIRARD	66743	5

TOTAL POPULATION AFFECTED: 0
TOTAL VIOLATIONS: 5
TOTAL PWS SYSTEMS: 1

PWS SYSTEMS WITH TTHM VIOLATIONS: 2003

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	# VIO.
1	PWWSD #11- BONE CREEK	A6500	KS2003725	0	GIRARD	66743	2
2	PARSONS	S5500	KS2009914	11384	PARSONS	67357	1

TOTAL POPULATION AFFECTED: 11384
TOTAL VIOLATIONS: 3
TOTAL PWS SYSTEMS: 2

PWS SYSTEMS WITH TREATMENT TECHNIQUE VIOLATIONS TOC: 2003

	PWS NAME	STATE #	EPA #	POP	LOCATION	ZIP	# VIO
1	EL DORADO	H1500	KS2001511	12669	EL DORADO	67042	3

TOTAL POPULATION AFFECTED: 12,669

TOTAL VIOLATIONS: 3

TOTAL PWS SYSTEMS: 1

PWS SYSTEMS FAILURE TO PROVIDE MONITORING PLAN: 2003

	PWS NAME	STATE #	EPA #	POP	LOCATION	ZIP	# VIO
1	EL DORADO	H1500	KS2001511	12669	EL DORADO	67042	1
2	PWWSD #11	A6509	KS2003725	0	GIRARD	66743	1

TOTAL POPULATION AFFECTED: 12,669

TOTAL VIOLATIONS: 2

TOTAL PWS SYSTEMS: 2

PWS SYSTEMS ISSUED BOIL WATER ADVISORY: 2003**

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	VIO.
1	TORONTO	W6500	KS2020701	307	TORONTO	66777	1
2	CHEROKEE CO. RWD #7	S8513	KS2002116	158	PITTSBURG	66762	1
3	RESERVE	T9000	KS2001302	99	RESERVE	66434	1
4	CRAWFORD CO. RWD #	J0513	KS2003722	497	FRANKLIN	66735	1
5	FLORENCE	I2000	KS2011503	673	FLORENCE	66851	1
6	ENTERPRISE	H8000	KS2004109	825	ENTERPRISE	67441	1
7	ATCHISON	B0010	KS2000506	10,140	ATCHISON	66002	1
8	ATCHISON CO. RWD #1	B0013	KS2000503	490	ATCHISON	66002	1
9	ATCHISON CO. RWD #2	B0012	KS2000505	150	ATCHISON	66002	1
10	ATCHISON CO. RWD #3	B0011	KS2000504	110	ATCHISON	66002	1
11	ATCHISON CO. RWD #4	X2011	KS2000501	310	VALLEY FALLS	66088	1
12	ATCHISON CO. RWD #5	I3500	KS2001104	8261	ATCHISON	66002	1
13	ATCHISON CO. RWD #6	B0015	KS2000510	549	ATCHISON	66002	1
14	FORT SCOTT	I3500	KS2001104	8261	FORT SCOTT	66701	1
15	BOURBON CO. RWD #2	I3514	KS2001103	6438	FORT SCOTT	66701	1
16	ARLINGTON	A8000	KS2015511	452	ARLINGTON	67514	1
17	GOESSEL	J2500	KS2011504	561	GOESSEL	67053	1
18	RUSH CO. RWD #1	P2011	KS2016509	150	MCCRACKEN	67556	1
19	LABETTE CO. RWD #7	Q3812	KS2009912	375	MOUND VALLEY	67354	1
20	WHITE CITY	Y3000	KS2012703	514	WHITE CITY	66872	1
21	HESSTON	K8000	KS2007902	3531	HESSTON	67062	1
22	CRAWFORD CO. RWD #	I5510	KS2003703	365	FRONTENAC	66763	1
23	COLUMBUS	F6000	KS2002110	3355	COLUMBUS	66725	1
24	OXFORD	S2500	KS2019111	1162	OXFORD	67119	1
25	POTWIN	T1500	KS2001518	449	POTWIN	67123	1

TOTAL POPULATION AFFECTED: 48,182

TOTAL VIOLATIONS: 25

TOTAL PWS SYSTEMS: 25

****BOIL WATER ADVISORIES ARE NOT A VIOLATION, BUT A PRECAUTIONARY ACTION.**

PWS SYSTEMS WITH NITRATE MCL VIOLATIONS: 2003

	PWS NAME	STATE#	EPA#	POP.	LOCATION	ZIP	# VIO.
1	ALMENA	A3500	KS2013701	461	ALMENA	67627	1
2	ARGONIA	A7000	KS2019116	524	ARGONIA	67004	3
3	ARLINGTON	A8000	KS2015511	452	ARLINGTON	67514	4
4	BUFFALO HILLS PARK	K5530	KS2005110	93	HAYS	67601	1
5	CONWAY SPRINGS	F7000	KS2019118	1308	CONWAY SPRINGS	67031	4
6	GAYLORD	I9000	KS2018301	141	GAYLORD	67638	1
7	GREEN	J6500	KS2002703	145	GREEN	67447	1
8	GREENLEAF	J7000	KS2020106	349	GREENLEAF	66943	2
9	HARPER CO. RWD #4	F7010	KS2007708	320	FREEPORT	67049	3
10	HAYS SUBURBAN ESTATES	K5512	KS2005116	45	HAYS	67601	1
11	HIAWATHA	K8500	KS2001305	3410	HIAWATHA	66434	2
12	INGALLS	L8200	KS2006902	331	INGALLS	67853	3
13	JEFFERSON CO. RWD #15	J5310	KS2008721	228	GRANTVILLE	66429	4
14	JEWELL CO. RWD #1	O8010	KS2008907	959	ESBON	66941	4
15	KIRWIN	M7000	KS2014702	224	KIRWIN	67644	1
16	LANE CO. RWD #1	K6510	KS2010102	300	HEALY	67850	1
17	LARNED STATE HOSPITAL	N0529	KS2014503	1065	LARNED	67550	1
18	LONG ISLAND	1000	KS2014703	152	LONG ISLAND	67647	2
19	MCDONALD	P3000	KS2015303	155	MCDONALD	67745	1
20	NORWICH	R3000	KS2009505	543	NORWICH	67118	1
21	OAKLEY	R3500	KS2010901	2173	OAKLEY	67748	1
22	PLAINS	S9000	KS2011903	1171	PLAINS	67869	2
23	PONDEROSA MHP	O753C	KS2016110	20	MANHATTAN	66502	2
24	PRETTY PRAIRIE	T4000	KS2015501	610	PRETTY PRAIRIE	67570	3
25	ROBINSON	U1500	KS2001301	212	ROBINSON	66532	1
26	SCOTT CITY	U7510	KS2017101	3765	SCOTT CITY	67871	2
27	SUMNER CO. RWD #5	Y0510	KS2019101	585	CONWAY SPRINGS	67031	4
28	VIOLA	X3200	KS2017313	212	VIOLA	67149	4
29	WESTERN ACRES MHP	L6516	KS2015506	60	HUTCHINSON	67502	1
30	WHITE CITY	Y3000	KS2012703	514	WHITE CITY	66872	2

TOTAL POPULATION AFFECTED:	20,527
TOTAL VIOLATIONS:	63
TOTAL PWS SYSTEMS:	30

PWS SYSTEMS WITH NITRATE MONITORING VIOLATIONS: 2003

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ALL SEASON'S MHP	J5513	KS2000912	25	GREAT BEND	67530	1
2	ARGONIA	A7000	KS2019116	524	ARGONIA	67004	1
3	BELPRE	B8000	KS2004701	100	BELPRE	67519	1
4	COUNTRYVIEW MHP	L6530	KS2015520	54	HUTCHINSON	67502	1
5	GAYLORD	I9000	KS2018301	141	GAYLORD	67638	2
6	LARNED STATE HOSPITAL	N0529	KS2018301	1065	LARNED	67550	1
7	SHEPHERD'S GATE BOYS HOME	A9511	KS2116907	50	ASSARIA	67416	1
8	SUNDOWNER MHP	U5021	KS2016910	220	SALINA	67401	1
9	WAKEFIELD	X5000	KS202708	841	WAKEFIELD	67487	1
10	WALLACE CO. RWD #1	Y1310	KS2019901	200	SHARON SPRINGS	67758	1

TOTAL POPULATION AFFECTED: 3,220

TOTAL VIOLATIONS: 11

TOTAL PWS SYSTEMS: 10

NON-COMMUNITY PWS SYSTEMS WITH NITRATE MCL VIOLATIONS: 2003

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	# VIO.
1	FAIRFIELD H.S. USD #310	M9710	KS2115514	240	LANGDON	67583	4
2	KDOT-COLBY REST AREA EB 3-251	R205V	KS2119308	25	TOPEKA	66941	1
3	MAIZE INTERMED. SCHL-USD #266	O6811	KS2117304	870	MAIZE	67101	1
4	NAT. BEEF PACKING-DODGE	G6540	KS2105718	1000	DODGE CITY	67801	2
5	PRATT AIRPORT	T3001	KS2115101	40	PRATT	67124	4
6	ST. JOSEPH ELEM. SCHOOL USD #	Q4510	KS2115513	80	MOUNT HOPE	67108	1
7	STAGG GOLF CLUB, INC.	O7540	KS2116114	25	MANHATTAN	66502	1
8	SUPPESVILLE GOLF COURSE	P7411	KS2119103	25	MILTON	67106	4
9	TYSON FRESH MEATS, INC.	L1241	KS2105525	2900	HOLCOMB	67851	4

TOTAL POPULATION AFFECTED: 5,205

TOTAL VIOLATIONS: 22

TOTAL PWS SYSTEMS: 9

PWS SYSTEMS WITH TOTAL RADIONUCLIDE MCL VIOLATIONS: 2003

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	# VIO.
1	COLUMBUS	F6000	KS2002110	3355	COLUMBUS	66725	1

TOTAL POPULATION AFFECTED: 3355

TOTAL VIOLATIONS: 1

TOTAL PWS SYSTEMS: 1

**PWS SYSTEMS WITH SURFACE WATER TREATMENT VIOLATIONS
MONITORING, ROUTINE/REPEAT: 2003**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	LONGTON	O2000	KS2004903	378	LONGTON	67352	5
2	LOUISBURG	O3000	KS2012106	2764	LOUISBURG	6053	1
3	PLEASANTON	T0000	KS2010704	1384	PLEASANTON	66075	1

TOTAL POPULATION AFFECTED: 4526

TOTAL VIOLATIONS: 7

TOTAL PWS SYSTEMS: 3

**PWS SYSTEMS WITH SURFACE WATER TREATMENT
TECHNIQUE VIOLATIONS: 2003**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ATLANTA	B0500	KS2003502	256	ATLANTA	67008	1
2	BUFFALO	D6500	KS2020511	279	BUFFALO	66717	2
3	ELK CITY	H2500	KS2012520	301	ELK CITY	67344	1
4	IOLA	L9000	KS2000103	6209	IOLA	66749	1
5	KCP&L-LACYGNE	M8540	KS2110701	335	LACYGNE	66040	2
6	LONGTON	O2000	KS2004903	378	LONGTON	67352	2
7	MADISON	O6000	KS2007301	845	MADISON	66860	1
8	NEODESHA	Q9000	KS2020502	3000	NEODESHA	66757	3
9	SEDAN	U8500	KS2001903	1312	SEDAN	67361	1

TOTAL POPULATION AFFECTED: 12915

TOTAL VIOLATIONS: 14

TOTAL PWS SYSTEMS: 9

PWS SYSTEMS WITH LEAD AND COPPER VIOLATIONS**FOLLOW-UP OR ROUTINE LEAD/COPPER TAP MONITORING: 2003**

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	# VIO.
1	BUTLER CO. RWD #8	Y3518	KS2001528	928	ROSE HILL	67133	1
2	COLLYER	F5000	KS2019502	129	COLLYER	67631	1
3	MCCUNE	P2500	KS2003708	424	MCCUNE	66753	1
4	OSAGE CO. RWD #6	O4510	KS2013902	370	LYNDON	66451	1
5	RICHMOND	U0000	KS2005904	510	RICHMOND	66080	1
6	THAYER	W4000	KS2013312	532	THAYER	66776	1
7	TUTTLE TERRACE	O7531	KS2016102	67	MANHATTAN	66503	1

TOTAL POPULATION AFFECTED: 2,960

TOTAL VIOLATIONS: 7

TOTAL PWS SYSTEMS: 7

PWS SYSTEMS WITH LEAD AND COPPER**TREATMENT RECOMMENDATION VIOLATIONS: 2003**

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	# VIO.
1	PLAINVILLE	S9500	KS2016301	2000	PLAINVILLE	67663	1
2	SENECA	V0000	KS2013102	2082	SENECA	66538	1
3	PERRY	S7000	KS2008720	906	PERRY	66073	1

TOTAL POPULATION AFFECTED: 4,988

TOTAL VIOLATIONS: 3

TOTAL PWS SYSTEMS: 3

PWS SYSTEMS WITH MAJOR CONSUMER CONFIDENCE REPORT (CCR) VIOLATIONS: 2003

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	# VIO.
1	TREECE	W7500	KS2002104	166	TREECE	66778	1

TOTAL POPULATION AFFECTED: 166

TOTAL VIOLATIONS: 1

TOTAL PWS SYSTEMS: 1

**PWS SYSTEMS WITH TOTAL COLIFORM
ACUTE MCL VIOLATIONS: 2003**

	PWS NAME	STATE ID	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ATCHISON CO. RWD #4	X2011	KS2000501	310	VALLEY FALLS	66088	1
2	BLUE RIDGE ELEM. SCL	E6012	KS2104105	62	CHAPMAN	67431	1
3	DONIPHAN CO. RWD #1	N4710	KS2004305	75	ROBINSON	66532	1
4	PRATT LIVESTOCK	NT3011	KS2115107	25	PRATT	67124	1
5	WILSON CO. RWD #7	I5012	KS2020516	390	FREDONIA	66736	1

TOTAL POPULATION AFFECTED: 862
TOTAL VIOLATIONS: 5
TOTAL PWS SYSTEMS: 5

PWS SYSTEMS WITH TOTAL COLIFORM MCL VIOLATIONS: 2003

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ALTON	A5000	KS2014102	112	ALTON	67623	1
2	ATCHISON CO. RWD #2	B0012	KS2000505	150	ATCHISON	66002	1
3	ATCHISON CO. RWD #4	X2011	KS2000501	310	VALLEY FALLS	66088	1
4	ATCHISON CO. RWD #6	B0015	KS2000510	549	ATCHISON	66002	1
5	BLUE RIDGE ELEM. SCL	E6012	KS2104105	62	CHAPMAN	67431	1
6	BUTLER CO. RWD #4	B2010	KS2001506	1940	AUGUSTA	67010	1
7	CIRCLEVILLE	E9500	KS2008504	181	CIRCLEVILLE	66416	1
8	COFFEY CO RWD#3	N2510	KS2003106	1250	NEW STRAWN	66839	1
9	COTTONWOOD FALLS	F8500	KS2001703	930	COTTONWOOD	66845	1
10	DODGE CITY	G6500	KS2005710	25345	DODGE CITY	67801	1
11	DONIPHAN CO. RWD#1	N4710	KS2004305	75	ROBINSON	66532	1
12	DONIPHAN CO. RWD #5	X9010	KS2004307	1320	WATHENA	66090	1
13	EXCEL CORP.	G6542	KS2105716	2501	DODGE CITY	67801	1
14	FOUR SEASONS RV	A0530	KS2104108	25	ABILENE	67410	1
15	FREDONIA	I50000	KS2020513	2547	FREDONIA	66736	1
16	HARTFORD	K3000	KS2011111	507	HARTFORD	66854	1
17	HARVEY CO RW #1	S6511	KS2007907	2565	WALTON	67151	1
18	HOLCOMB	L1200	KS2005509	1969	HOLCOMB	67851	2
19	JUNCTION CITY	M3000	KS2006108	17753	JUNCTION CITY	66441	1
20	LABETTE CO RWD #7	Q3812	KS2009912	375	MOUND VALLEY	67354	1
21	LIBERAL FEEDERS LP	N7033	KS2017507	105	LIBERAL	67901	1
22	MIAMI CO RWD #4	O3010	KS2012108	395	DREXEL	64742	1
23	PRATT LIVESTOCK	T3011	KS2115107	25	PRATT	67124	1
24	RANDALL	T6000	KS2008901	84	RANDALL	66963	2
25	ROSELAND	U2800	KS2002105	99	ROSELAND	66703	1
26	RUSH CO RWD #1	P2011	KS2016509	150	MCCRACKEN	67556	1
27	SH. CO. RWD #2C	V2010	KS2017713	432	TOPEKA	66618	1
28	SHEPHERDS GATE	A9511	KS2116907	50	ASSARIA	67416	1
29	WELLINGTON	Y0500	KS2019119	8515	WELLINGTON	67152	1
30	WILSON CO RWD #7	I5012	KS2020516	390	FREDONIA	66736	2

TOTAL POPULATION AFFECTED: 70711
TOTAL VIOLATIONS: 33
TOTAL PWS SYSTEMS: 30

PWS SYSTEMS WITH TOTAL COLIFORM MAJOR MONITORING VIOLATIONS: 2003

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ALBERT	A1700	KS2000914	180	ALBERT	67511	1
2	ALL SEASONS MHP	J5513	KS2000912	150	GREAT BEND	67530	1
3	BISHOP SEABURY	N1015	KS2104506	25	LAWRENCE	66046	1
4	CENTRE H.S.	O2710	KS2111501	181	LOST SPRINGS	66859	1
5	CHICOPEE RWD	S8514	KS2003704	418	PITTSBURG	66762	1
6	COAL HOLLOW	W4011	KS2013302	157	THAYER	66776	1
7	CORBIN WATER CO	E1511	KS2019120	35	CALDWELL	67022	1
8	CRAWFORD CO #1	I5510	KS2003703	365	FRONTENAC	66763	1
9	CULLISON	G0500	KS2015104	96	CULLISON	67124	1
10	EASTON	G9500	KS2010301	373	EASTON	66020	2
11	EMMETT	H6000	KS2014901	280	EMMETT	66422	1
12	HOWISON HEIGHTS	U5033	KS2016909	87	SALINA	67401	1
13	KDOT BLOOM WB 63511	I755K	KS2105725	25	TOPEKA	66612	1
14	KDOT INGALLS RA 63502	I755D	KS2106903	25	TOPEKA	66612	1
15	KDOT SEWARD	I755P	KS2117508	25	TOPEKA	66612	1
16	KOCH NITROGEN CO	G6544	KS2005706	55	DODGE CITY	67801	1
17	MONTGOMERY CO #1	L8011	KS2012505	130	INDEPENDENCE	67301	1
18	MOSCOW	Q3400	KS2018902	243	MOSCOW	67592	2
19	NATIONAL BEEF PACKING	G6540	KS2105718	1000	DODGE CITY	67801	1
20	NICODEMUS TWNSP	R1100	KS2006505	32	BOGUE	67625	2
21	PARK HILLS CLUB	T3014	KS2115109	25	PRATT	67124	1
22	PHEASANT ACRES	L6508	KS2015515	70	HUTCHINSON	67501	2
23	RAYMOND	T7500	KS2015901	94	RAYMOND	67573	1
24	READING	T8000	KS2011114	246	READING	66868	1
25	RIVERTON SCL	U1013	KS2102102	820	RIVERTON	66770	1
26	RUSSELL CO RWD #4	J4010	KS2017101	90	GORHAM	67640	4
27	STAGG HILL GOLF CLUB	O7540	KS2116114	25	MANHATTAN	66502	1
28	SUNDOWNER WEST MHP	U5021	KS201610	220	SALINA	67401	1
29	TATARRAX HILLS	O7519	KS2016132	96	OLSBURG	66520	1
30	THUNDERBIRD MARINA	M3020	KS2106113	25	JUNCTION CITY	66441	1
31	WALLACE CO RWD #1	Y1310	KS2019901	200	SHARON SPRINGS	67758	10
32	WHEATSTATE CAMP	B2013	KS2101504	25	AUGUSTA	67010	1

TOTAL POPULATION AFFECTED:	5728
TOTAL VIOLATIONS:	48
TOTAL PWS SYSTEMS:	32

**PWS SYSTEMS WITH TOTAL COLIFORM MINOR VIOLATIONS
MONITORING AND REPORTING VIOLATIONS: 2003**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ALTOONA	A1700	KS2020508	180	ALTOONA	67511	1
2	ATCHISON CO. #1	B0013	KS2000503	490	ATCHISON	66002	1
3	ATCHISON CO #2	B0012	KS2000505	150	ATCHISON	66002	1
4	BARNARD	B4000	KS2010503	123	BARNARD	67418	1
5	BEATTIE	B6000	KS2011712	270	BEATTIE	66406	1
6	BISHOP SEABURY	N1015	KS2104506	25	LAWRENCE	66046	1
7	BRONSON	D4500	KS2001106	343	BRONSON	66716	1
8	CAMP KANZA	A0710	KS2115524	25	WICHITA	67201	2
9	CASEY'S GEN. STORE	O6818	KS2117342	40	MAIZE	67101	1
10	CHAPMAN	E6000	KS2004108	1249	CHAPMAN	67431	1
11	CHASE	E6500	KS2015906	477	CHASE	67524	1
12	CHICOPEE RWD	S8514	KS2003704	418	PITTSBURG	66762	1
13	CLEARVIEW CITY	F1300	KS2009123	317	CLEARVIEW CITY	66019	1
14	CLIFTON	F2000	KS2002709	534	CLIFTON	66937	1
15	COLLYER	F5000	KS2019502	127	COLLYER	67631	1
16	COLWICH	F6300	KS2017344	1271	COLWICH	67030	1
17	CORBIN WATER	E1511	KS2019120	35	CALDWELL	67022	3
18	COUNTRYSIDE RENT.	I7531	KS2005512	60	GARDEN CITY	67846	1
19	CULVER	G1000	KS2014306	171	CULVER	67484	1
20	DICKINSON CO #2	A0510	KS2004106	1560	CARLTON	67448	1
21	DICKINSON CO #3	E6010	KS2004115	39	CHAPMAN	67431	1
22	DOUGLAS CO #4	B3511	KS2004509	1663	BALDWIN CITY	66006	1
23	DOUGLAS CO #5	S1011	KS2004502	1580	LAWRENCE	66047	1
24	EASTON	G9500	KS2010301	373	EASTON	66020	1
25	EDNA	H0500	KS2009903	417	EDNA	67342	1
26	ELGIN	H2000	KS2001901	80	ELGIN	67361	3
27	ELKHART	H3000	KS2012901	2136	ELKHART	67950	1
28	EXCEL CORP	G6542	KS2105716	251	DODGE CITY	67801	1
29	GOVE	J4500	KS2006303	102	GOVE	67736	1
30	GREAT BEND IND. PK	J5501	KS2100910	750	GREAT BEND	67530	1
31	GREAT BEND	J5510	KS2000911	15066	GREAT BEND	67530	2
32	GREEN ACRES MHP	G6532	KS2005707	84	DODGE CITY	67801	1
33	GRENOLA	J8000	KS2004904	222	GRENOLA	67346	1
34	HAMILTON	K1000	KS2007303	334	HAMILTON	66853	1
35	HAVENSVILLE	K4500	KS2014903	144	HAVENSVILLE	66432	1
36	HEARTLAND COM.	W5512	KS2110303	25	TONGANOXIE	66066	2
37	HOYT	L4500	KS2008501	572	HOYT	66440	1
38	JACKSON CO #1	P1511	KS2008511	1300	HOYT	66440	1
39	KDOT NORTON	R205W	KS2113702	25	TOPEKA	66612	1
40	LEHIGH	N3200	KS2011506	214	LEHIGH	67073	1
41	LEON	N4500	KS2001515	642	LEON	67074	1
42	LINWOOD	N9500	KS2010310	377	LINWOOD	66052	1
43	MCCUNE	P2500	KS2003708	423	MCCUNE	66753	1
44	MCFARLAND	P3200	KS2019707	258	MCFARLAND	66501	1
45	MIDWAY USA	N7010	KS2117507	50	LIBERAL	67901	1
46	MONTGOMERY CO #6	L8014	KS2012506	1092	INDEPENDENCE	67301	1

47	MORLAND	Q1500	KS2006501	159	MORLAND	67650	2
48	MORNING STAR RANCH	I2010	KS2111513	35	FLORENCE	66851	2
49	NARKA	Q8000	KS2015707	88	NARKA	66960	1
50	NEOSHO CO #2	U5810	KS2013314	1275	STARK	66775	1
51	NICODEMUS TWNSP	R1100	KS2006505	32	BOGUE	67625	3
52	NORCATUR	R1500	KS2003902	166	NORCATUR	67653	1
53	OAKLEY	R3500	KS2010901	2173	OAKLEY	67748	1
54	OSBORNE CO #1A	A5010	KS2014103	81	ALTON	67623	1
55	PARK HILLS CLUB	T3014	KS2115109	25	PRATT	67124	2
56	PARKER	S5200	KS2010706	280	PARKER	66072	1
57	PARTRIDGE GRADE SCL	K4010	KS2115515	100	HAVEN	67543	1
58	PHILLIPSBURG	S8000	KS2014706	2593	PHILLIPSBURG	67661	1
59	PLEASANTVIEW ACAD.	K4012	KS2115517	96	HAVEN	67543	2
60	PRESTO OIL #15	L1210	KS2105533	25	GARDEN CITY	67846	1
61	PRESTON	T3500	KS2015102	162	PRESTON	67583	1
62	PRINCETON	T4200	KS2005912	322	PRINCETON	66078	1
63	REPUBLIC CO #1	F9510	KS2015702	680	COURTLAND	66939	1
64	ROLLING MEADOWS MHC	O6830	KS2017321	131	MAIZE	67101	1
65	RUSH CENTER	U3500	KS2016506	174	RUSH CENTER	67575	1
66	RUSSELL CO #2	U4011	KS2016706	40	RUSSELL	67665	2
67	SHALLOW WATER SCL	U7515	KS2117103	165	SCOTT CITY	67871	1
68	SHEPHERDS GATE	A9511	KS2116907	50	ASSARIA	67416	1
69	SPEARVILLE	V5000	KS2005712	817	SPEARVILLE	67876	1
70	SPIVEY	V5700	KS2009504	79	SPIVEY	67142	1
71	ST. JOHN	V7000	KS2018502	1301	ST. JOHN	67576	1
72	STAGG HILL GOLF CLUB	O7540	KS2116114	25	MANHATTAN	66502	1
73	SUBLETTE	W0500	KS2008103	1583	SUBLETTE	67877	1
74	SUNDOWNER WEST MHP	U5021	KS2016910	220	SALINA	67401	1
75	SUPESVILLE GOLF CLUB	P7411	KS2119103	25	MILTON	67106	1
76	SYCAMORE SPRINGS	U4510	KS2101303	25	SABETHA	66534	3
77	SYLVIA	W2500	KS2015502	325	SYLVIA	67581	1
78	TACO LOCO	I7525	KS2105535	25	GARDEN CITY	67846	1
79	THUNDERBIRD MARINA	M3020	KS2106113	25	JUNCTION CITY	66441	3
80	TIMKEN	W4500	KS2016504	82	TIMKEN	67575	3
81	TIPTON	W5000	KS2012310	240	TIPTON	67485	1
82	UNIVERSITY OF KANSAS	N1060	KS2004513	35000	LAWRENCE	66045	1
83	VIRGIL	X3500	KS2007307	114	VIRGIL	66870	1
84	WALTHERS OIL 15	Q2510	KS2120103	25	CUBA	66940	1
85	WEST HILLS SUBDIV.	L6517	KS2015519	60	NICKERSON	67561	1
86	WILSON LAKE ESTATES	K5537	KS2016710	33	LUCAS	67648	1
87	YODER MEATS	Y7711	KS2115533	45	YODER	67585	1

TOTAL POPULATION AFFECTED:	84985
TOTAL VIOLATIONS:	107
TOTAL PWS SYSTEMS:	77

**PWS SYSTEMS WITH TOTAL COLIFORM MAJOR MONITORING (REPEAT)
VIOLATIONS:2003**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	BLASI DAY CARE	Y3540	KS2117336	80	WICHITA	67215	1
2	HAVENSVILLE	K4500	KS2014903	144	HAVENSVILLE	66432	1
3	OSBORNE CO #1A	A5010	KS2014103	81	ALTON	67623	1
4	ST. PETERS SCL	U7310	KS2117334	163	WICHITA	67215	1

TOTAL POPULATION AFFECTED:	468
TOTAL VIOLATIONS:	4
TOTAL PWS SYSTEMS:	4

APPENDIX C

LIST OF KDHE CONTACTS FOR ADDITIONAL INFORMATION

JULY 2004

KDHE - BUREAU OF WATER
PUBLIC WATER SUPPLY www.kdhe.state.ks.us
1000 SW JACKSON - SUITE 420
TOPEKA, KANSAS 66612-1367

Director, Bureau of Water
KARL MUELDENER.....(785) 296-5500

Public Water Supply Section Chief
DAVE WALDO.....(785) 296-5514

Capacity Development
CATHY TUCKER-VOGEL.....(785) 298-7130

Engineering and Permits, Unit Chief
DAN CLAIR.....(785) 296-5516

Engineering Plan Review
REX COX.....(785) 296-5539

Engineering Plan Review and Permits
DONALD SHEA (785) 206-5797

Compliance and Data Management Unit Chief
DARREL PLUMMER.....(785) 296-5523

Monitoring and Compliance Coordinator, Surface Water Treatment
JONATHAN HAYNES.....(785) 296-0643

Enforcement and Regulation Development
KELLY KELSEY.....(785) 296-6297

Regulation Development
STEVE FROST.....(785) 296-5505

Consumer Confidence Report, Annual Compliance Report
PATTI CROY.....(785) 296-3016

Bacteriological
JEAN HERROLD.....(785) 296-5518

Lead and Copper, Trihalomethanes, Disinfection By-Products
RON CRAMER.....(785) 296-5946

Inorganics, Volatile and Synthetic Compounds, Nitrate, Radionuclides
JEFFREY HAND.....(785) 368-8336

Systems Analyst
TERRY FRANKLIN (785) 296-5658

Data Management
ELLAN SPIVEY.....(785) 296-6434

Data Entry
Kathy Fritts.....(785) 296-7111

Administrative Assistant
Linda White.....(785) 296-5514

Administrative Assistant
Angela Bowers.....(785) 206-6340

Operator Certification
VICKIE JO WESSEL.....(785) 296-2976

Source Water Assessment
ROB BEILFUSS.....(785) 296-5535

Kansas PWS Loan Fund
WILLIAM CARR.....(785) 296-0735

As required by the Safe Drinking Water Act, the State of Kansas has made the 2002 Public Water Systems report available to the public. Interested individuals can obtain a copy of the 2002 Annual Compliance Report for the State of Kansas by accessing:

State Website: www.kdhe.state.ks.us/pws/

Telephone: (785) 296-3016

Fax Number: (785) 296-5509

E-Mail: pcroy@kdhe.state.ks.us

Address of responsible state department: Kansas Department of Health and Environment
Bureau of Water
1000 SW Jackson - Suite 420
Topeka, Kansas 66612-1367

Contact Name: Patti J. Croy